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BIOLOGIA CENTRALI-AMERICANA.

INSECTA.

COLEOPTERA. Vol. VII.

EROTYLIDÆ, ENDOMYCHIDÆ, and COCCINELLIDÆ.

BY

The Rev. HENRY STEPHEN GORHAM, F.Z.S., &c.

1887–1899.

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INTRODUCTION.

THE three Families of which this, the Seventh Volume of the Coleoptera, treats—the Erotylidæ, the Endomychidæ, and the Coccinellidæ—form a not unnatural assemblage of genera, though at first sight, and indeed on closer examination, they present considerable divergence in points which have been usually regarded as of great importance in Classification. Such is the tarsal structure, which in the first of these families is pentamerous, but very much modified, becoming in the less specialized genera tetramerous. In the second family—the Endomychidæ—the foot is tetramerous, but again modified; it is the basal joint which becomes obsolete, the fourth joint of the tarsi being, as in the Erotylidæ, a mere node at the base of the fifth or claw-joint. In the Coccinellidæ this nodal joint disappears.

Notwithstanding this very important difference, which is without doubt correlated with the habits of these insects, there are too many points of agreement to be passed over. One of these is the presence of certain impressed lines on the metasternum and on the basal abdominal segment, which are clearly in the higher groups, as the Languriides and the Erotylides, the rudiments of original fossettes or broad depressions for enabling the femora to lie closely retracted, with the tarsi and tibiæ shut up like a pocket-knife. These fossettes are retained and developed in the great majority of the Coccinellidæ, or become rudimentary in the Languriides and Erotylides, which have the legs less retractile, and are quite lost in the Endomychidæ and some genera of the other two groups.

The sole of the foot, like that of the Phytophagous section of Coleoptera, is broad and spongiose in the great majority of genera, two joints (Coccinellidæ), or three (Erotylidæ), being bilobed, flattened beneath, and furnished with papillæ, which are adapted for obtaining a firm hold on plants; this character, through the phytophagous Coccinellidæ, affords a clue to the phylogenetic connection of these families with the true Phytophaga. The Aphid-devouring instinct of the more highly developed Coccinellidæ would easily be explained on the view that certain phytophagous beetles obtained and preferred this food while pursuing their original habit of life, and possibly when the Aphides or Coccidæ were so abundant that they could not be avoided.

It is, I think, a significant fact that the Erotylidæ and Endomychidæ still prefer, or are almost always associated with, the highly nitrogenous pabulum afforded by fungi.

With regard to the distribution of these families so much is new that it has very greatly modified our earlier ideas, and so many new facts no doubt remain to be discovered that hasty generalizations must not be drawn. When Lacordaire wrote his Monograph of Erotylidæ, it was thought that the New World was very plainly the home of these beetles; but subsequent collections from the Eastern hemisphere showed that these regions were possibly as well stocked. The numerous species of this family brought to notice in the present work have tended to restore the apparent supremacy of the Western Continent, but I believe it will prove to be more apparent than real.

Taking the Languriides, Chapuis, in the 'Genera Coleopterorum,' notices two genera only; Crotch, in his 'Revision,' admits fifteen; and in my 'Classification,' published in 1887, I found it necessary to propose thirty-two, while two or three more have since been added. The number of genera enumerated in this volume from Central America is fourteen, while of the sixty-nine species recorded, fifty are treated as new. It is probable that an equal number of species exist in both hemispheres.

Of the true Erotylidæ (the Dacnides, Triplacides, and Erotylides) fifty-six genera are recognized by Crotch, and fifty-seven in the Munich Catalogue, with 1011 species (omitting *Helota* and *Orestia*, the last-mentioned being an ordinary member of the Phytophaga). Thirty-five genera are found in the New World, five only of which are common to both hemispheres; of these latter, *Euxestus*, *Dacne*, *Triplax*, and *Cyrtotriplax* (=*Tritoma*) are feeble forms whose relations are not yet well defined, and are, moreover, indicative of the northern regions of the globe. It is therefore to be observed that only one genus of well-ascertained position, viz. *Megalodacne*, is represented in both hemispheres. From the region under investigation we have recorded thirty-two genera and 213 species, nine genera and 104 species being treated as new. To compare the ascertained Fauna with that of the Old World it would be necessary to take into account a large number of new genera proposed by myself and others since the publication of the Munich Catalogue and of the Supplement to it. The only conclusion, I think, we can at present draw from these data is that while a very large number of new species remain to be discovered in all parts of the world, the predominance, both of genera and species, though not large, is in favour of the New World, and that the forms of this highly developed family of beetles are

largely endemic. The Endomychidæ, which I regard as also being a highly evoluted family, but as containing more primitive and generalized genera than the Erotylidæ, bear out this view.

The number of genera of the family Endomychidæ, including the additions to the Munich Catalogue, may be roughly taken as sixty, and the described species as 480. In the volume now completed the genera recorded are fifteen, with eighty-one species, of which four genera and thirty-nine species are new. I have before recorded my conjecture that the smaller and more hairy species, as those of the large genus *Stenotarsus*, represented a more primitive less evoluted form, and these are found in all parts of the world.

The large family of the Coccinellidæ presents more difficulties on the subject of distribution, from their being, as it appears to me, taken as a whole, of a more generalized type than the two preceding families.

What strikes one, on studying this group with attention, is the very feeble and trivial characters on which the genera are based, and yet that better ones cannot be found. And this appears from the varying opinions of classifiers as to their adoption in their systems. Thus, while Crotch admits 137 genera for 1340 species, only 100 genera are retained in the Munich Catalogue for 1444 species.

For Central America, as recorded in this volume, 239 species are placed in forty-three genera; and while of this rather limited number 108 species are apparently new, I have only ventured to propose three new genera.

But the species of this family rather readily divide into two sections, according as they are smooth or hairy, and still more so if we take the larger and more important portion of the latter which are phytophagous, and have the mandibles retaining the form adapted for that kind of food.

One can hardly avoid the conclusion that the *Epilachnæ* are derived from the Phytophagous stirps, not only on account of their food, but of their very close resemblance in many instances to Cassididæ, some very closely resembling *Chelymorphæ*, and others having the metallic lustre of so many of this latter family; and the singularly convex and inflated form of the elytra in the Coccinellidæ, modified, but present, in the *Ægithi* and true *Erotyli*, having, as I think, its counterpart in the gibbous and elevated forms of Cassididæ. It is not only in their food that the

Epilachnæ have been conservative, but in the evolution of their structure also, as they belong to a plain generalized type, perhaps best adapted for living under varying conditions with very little modification; and, like the genus *Stenotarsus*, *Epilachna* is distributed in almost every part of the world, below the sixty-fifth parallel of North latitude. It is well known how this genus predominates in the Eastern hemisphere, and how the species there are so little differentiated that it is very difficult to distinguish or classify them.

The higher forms of the family, from their black-and-red-spotted bodies, and from having to seek their aphidean food on the surface of plants, must be peculiarly attractive to their enemies. This brilliant livery seems retained and even developed from their ancestry; but it is compensated for by two very important facts—(1) a secretion, distasteful, as it seems, to birds, or lizards and other reptiles; (2) a high power of contractility, enabling them to drop on the slightest alarm. It is for this last-mentioned purpose that the fossæ, so usual on the basal segment of the abdomen, seem to have been produced, the rudiments of which (now of no use) are visible in the Erotylides and Languriides; and though these rudiments are rarely seen in the Endomychidæ, it is a significant fact that in the genus *Panomæa*, which so remarkably mimics various Coccinellidæ, as nearly always to be taken for one even by Coleopterists, the structure is retained, as well as the round and convex form and the type of marking.

An immense amount of material has passed through my hands during the publication of this volume, and I may especially call attention to the vast number of specimens due to Mr. G. C. Champion's careful collecting, especially in the small and obscure species usually neglected.

There still remain a considerable number of minute and obscure insects unclassified, some of which, without doubt, pertain to the group here treated, but it was thought better to close the work. Many specimens of the genus *Hapalips* (Languriides) were unfortunately mislaid, and cannot now be included, but must be described or noticed elsewhere. It is obvious, however, that every collection of any extent will for some time to come contain new species.

SHIRLEY WARREN, SOUTHAMPTON.
February 1899.

H. S. G.

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* *H. jocosa* on p. 192 and on the Plate.

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ERRATA ET CORRIGENDA.

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103	13	The reference to the figures of **Cypherotylus debauvei** should read : (*C. dromedarius*, Tab. VI. figg. 2, 2 *a*, ♂.)
160	20	After **Coccinella concinna** insert : (Tab. IX. fig. 7.)
247	6	for **caudata** read **caudatus.**

ZOOLOGIA.

Class INSECTA.

Order COLEOPTERA.

Fam. EROTYLIDÆ.

Subfam. *LANGURIIDES.*

The "Languriides," as a subfamily of the Erotylidæ, may be termed aberrant—not that they are separated from the rest of the family by any very trenchant character, but on account of their remarkably homogeneous elongate form and generalized structure. A proper classification of them has not hitherto been attempted; the described species are, however, now becoming so numerous that some further division of the group into genera has been found necessary, and an attempt to express their mutual relationships will be found in a paper by myself in the 'Proceedings' of the Zoological Society, 1887, pp. 358–362. The family is widely distributed, being found in the Tropics generally, in the Nearctic Region and Japan, in North Australia, and at the Cape of Good Hope. No species occur in Europe, New Zealand, or Madagascar, nor do any extend far north or south of the Tropics.

GONIOLANGURIA.

Goniolanguria, Crotch, Cistula Ent. i. p. 395 (1876).

Type *Languria latipes*, S. Saunders, Trans. Ent. Soc. Lond. i. p. 149, t. 14. f. 1 (1834).

This genus was established by Crotch and formulated as follows:—"Elytra produced at the apex, slightly divaricating, denticulate; thorax margined at the base, with a small stria on each side; head with the sides angulated for the very large mandibles; occiput with one stridulating series; antennæ with a five-jointed club; tarsi very broadly dilated."

In such a difficult matter as the formation of genera in this group has proved (so difficult that the late Baron von Harold abandoned it in his paper on the Eastern forms), it will easily be imagined that the formula quoted above is wholly insufficient.

Crotch's second species (as he himself points out) differs; and as a fact the specimens included under the name *latipes*, Saund., in his collection, not only, as he surmised, belong to two or more species, but must be placed in different genera.

Five or six of these specimens have long front legs and roughened femora and tibiæ of both the front and middle legs, and are males, being so far equivalent to the species here described under the new generic name *Dasydactylus*; while the typical example (which appears to be the only one correctly identified with *Languria latipes*, Saunders), from which Crotch drew his diagnosis, differs wholly from the others in many respects. In this specimen the head is not symmetrical, and the soles of the three basal joints of the tarsi, and notably the front pair, are clothed with close, short, and squamose scales without setæ or hairs; while in the species of the *Dasydactylus* type the tarsi are more or less hairy or setose, and the front pair in the male sex has the basal joints not only widened, but often quite villose. Thus the sexes are more differentiated in the species of the *Dasydactylus* type; but it is especially noticeable that, with certain exceptions, the species of the New World belong to the latter section, and that the majority of the genera which exhibit the spongiose form of foot are from Eastern Tropical Asia.

Mr. Fowler while pointing out, in the Trans. Ent. Soc. Lond. 1885, pp. 381–383, the important characters that exist in the structure of the head, has very naturally been misled by this want of discrimination of the sexes, for his remarks about the clypeus, or as I here term it the epistoma, apply to the *Dasydactylus*-looking males, and not to the *Languria latipes*. It is therefore necessary to give other characters by which the species allied to this type may be correctly assigned to their proper place:—

Goniolanguria (Crotch). Tarsi antici valde dilatati, subtus spongiosi fere velutini, supra pube molli tenuiter vestiti maris hirtuli; epistoma antice angulatum haud vel leviter excisum.

1. **Goniolanguria (?) palmata.**

Nigro-ænea, nitida, subtus cum pedibus nigro-picea; capite prothoraceque fere glabris, hoc oblongo-quadrato; elytris obsolete punctato-striatis, interstitiis minute subseriatim punctulatis, apicibus truncatis, leviter denticulatis. Long. 15 millim. ♂.

Mas abdominis segmento ventrali apicali ad apicem in medio dense nigro-pubescente.

Hab. PANAMA, near the city (*Champion*).

Fem. (?) abdominis segmento ventrali apicali minus dense pubescente.

Hab. GUATEMALA, Purula (*Champion*).

The general characters of the species now described agree pretty closely with those of the type of *Goniolanguria*, Crotch; the head is not quite symmetrical, the left mandible being larger than the right-hand one, and the gena being proportionately swollen to afford it a basis; a stridulating file is found when the head is bent forward so as to withdraw the crown from the thorax; the front feet in both sexes (assuming

the single example from Purula to be the female of the same or a closely allied species) are very wide, their basal joint as wide as the second, not hairy but with spongy soles and finely pubescent above; in neither sex do the femora show any tubercles or roughening, and the apical segment is not excised but bears a thick hairy patch. The elytra taper more strongly than in *Trapezidera* or *Teretilanguria*, and their apex is truncate with many denticules. The antennæ have a distinct five-jointed club; the antennal sockets are large and open, but not so explanate as in the type of the genus; the ocular striola is deep and straight, divaricating behind from the canthus; the epistoma is angular, entire at its apex, marked by a vague impression from the rest of the head; the labrum appears to be membranous, very much reduced, but set with long shaggy fulvous hairs.

The head in the hypothetical female from Purula is more strongly punctulate than that of the Panama male type.

TRAPEZIDERA.

Trapezidera, Motschulsky, in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 244 (1860)*; Crotch, Cistula Ent. i. p. 393 (1876).

Motschulsky can scarcely be said to have characterized this genus; it is merely a name suggested for species of *Languria* with the apex of the elytra denticulate. Crotch separates *Teretilanguria* for those species which have a double stridulating file on the crown, and *Goniolanguria* for those which have a single file together with the apex of the elytra truncate. Both these genera are good, and are further characterized here. I find it necessary also to separate *T. longicollis*, Motsch. (= *prolongata*, Crotch, a name adopted from Chevrolat's collection). This will leave for *Trapezidera* certain species which have the thorax trapezoidal and the elytra with six or seven denticules at the apex; it will be represented by *T. ænea*, Crotch, as a type. I think it probable that *T. angusticollis*, Motsch., and some other of this author's species are identical with *T. ænea*; but the identification of these species does not seem possible from the descriptions.

I give a fresh definition of *Trapezidera*:—Elongate, but not more so than usual; antennæ with the terminal four joints forming a flat and pubescent club, the seventh joint not nearly so wide as the eighth and not so pubescent; orbital striola scarcely leaving the canthus, but little produced backwards; prosternum flat and horizontal, with a deep fovea on each side of the intercoxal process, its apex a little emarginate; shoulders of the elytra the widest part; apical ventral segment punctured and pubescent, not laterally excised (?); tarsi scarcely hairy in either sex, nor wider in the male than in the female.

* Motschulsky (Etudes Ent. 1859, p. 66) had already used the name *Trapeziderus* for a genus of Staphylinidæ; I, however, follow Crotch in retaining *Trapezidera*.

1. **Trapezidera ænea.** (Tab. I. fig. 3.)

Trapezidera ænea, Crotch, Cist. Ent. i. p. 393[1].
Languria ahena, Sturm, in litt.

Hab. MEXICO[1], Guanajuato, Parada, Toxpam, San Andres Tuxtla (*Sallé*), Zapotlan, Colima, Cordova, Morelia in Michoacan (*Höge*); GUATEMALA, Calderas, San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Cache (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*).

This species (which I use for the type of the genus in default of knowing *T. angusticollis*) has the head strongly and closely punctured; the orbit of the eye forming a ridge, the ridge prolonged round the base of the antennæ in front, and divaricating a little from the eye behind, but not continued further back than the eye itself. The thorax is not very convex, rather depressed behind, a little angularly prominent in the middle of its base, the base margined; the basal striolæ only indicated by a puncture on each side; its disc closely and rather distinctly punctate. The elytra have the striæ fine and very thickly punctured; with numerous punctures, of about equal size, in the interstices, so that the punctures appear confused with the striæ; they are twice as wide at the base as at the apex. The body beneath and the greater part of the legs are pitchy; the breast and abdomen almost smooth and shining; the prosternum is wrinkled, its intercoxal process margined by a line which becomes deeper behind so as to form two fossæ; the apical segment of the abdomen is punctured.

Crotch has apparently compared this species with his *T. chalcea*. The general form and size are very much alike in the two species; but the latter has a smooth head and roughened front tibiæ, and pertains to the genus *Dasydactylus* as here defined; *T. ænea* is, moreover, more distinctly brassy in colour above. It appears to be a commoner species in the State of Panama than further north, and I have only seen two specimens from Guatemala and one from Nicaragua.

The specimen figured is from Cordova. The examples from this locality have the head and thorax more coarsely punctured than those from other Mexican localities.

2. **Trapezidera semiotina.** (Tab. I. fig. 4.)

Ferruginea, nitida; prothoracis limbo laterali lineaque mediana, scutello, elytrorum margine reflexo, genibus, tibiis, tarsis, trochanteribus antennisque, nigris; elytris crebre subtiliter punctatis, sutura postice cum apice nigro-fuscis. Long. 12–17 millim. ♀?

Hab. MEXICO, Panistlahuaca (*Sallé*); GUATEMALA, Rio Maria Linda (*Champion*).

Wider across the shoulders and more strongly narrowed to the apex than *T. ænea*; the elytra also having their apex almost truncate, though only the extreme apex, which bears four or five distinct denticulations, is straight. The antennæ have the club narrow and composed of five joints, while the preceding or sixth joint is nearly as wide as the seventh. This species therefore differs from the generic formula of *T. ænea*, and may possibly have to be separated; it is not, however, a *Teretilanguria*, the ocular striola

being simple and straight, the thorax finely (but distinctly) margined at the base, the scutellum transverse, and the elytra closely and irregularly punctured. I am unable to distinguish the sexes, although having only seen four specimens it is not possible to assert we have both sexes present. The prosternal process is wide, slightly raised above the plane of the front part of the prosternum, very even, and finely margined and widened at the apex, the apex truncate in a straight line. The apical ventral segment is slightly pubescent, scarcely punctured, blackish at the tip, and only a little acuminate. The ferruginous colour with parts black mentioned in the diagnosis is amply sufficient for the recognition of *T. semiotina*, and give this species a very Elateroid look. Three of the four specimens are from Panistlahuaca.

3. **Trapezidera lateralis.**

Castaneo-rufa; antennis, genibus, tibiis tarsisque nigris; elytris extus et ad apices cærulescentibus, punctato-striatis, interstitiis subrugulosis et confuse punctatis, apicibus leviter denticulatis; capite prothoraceque fere glabris. Long. 8 millim.

Hab. MEXICO, Cordova (*Höge*), Toxpam (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, San Gerónimo, Chiacam, San Juan in Vera Paz (*Champion*).

Head, thorax, body, and base of the legs castaneous, almost blood-red; antennæ, apical half of the femora, tibiæ, and tarsi black; elytra steel-blue, with the suture and usually the greater part of the disc castaneous-red. This species is very difficult to place, as hitherto I have not been able very satisfactorily to distinguish the sexes. The prosternum is broad and smooth, narrowly margined, with the apex truncate and gently emarginate; the femora are not much thickened, nor apparently at all roughened. The only character which I can find for separating the males is, that in some specimens the tarsi appear wider than in others, but not decidedly so, nor are they very hairy. The apex of the elytra is faintly denticulate. The apical ventral segment is blackish at its tip and sparingly pubescent. Taking the whole of its characters, I think at present this curiously-coloured species had better be placed with *Trapezidera ænea* and *T. semiotina*. About twenty specimens in all are before me. It is the "*Languria lateralis*" of Sallé's collection.

4. **Trapezidera angusticollis.**

Trapezidera angusticollis, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 244[1].

Hab. GUATEMALA[1].

It is not possible to identify this or the following species from the descriptions, which would apply to a great many species of Languriides; nor is it probable that they are congeneric with *T. ænea*. We insert them here to render the references complete.

5. **Trapezidera brunnipes.**

Trapezidera brunnipes, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 244[1].

Hab. CENTRAL AMERICA[1].

6. **Trapezidera dilaticollis.**

Trapezidera dilaticollis, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 244[1].

Hab. NICARAGUA[1].

7. **Trapezidera brunneiventris.**

Trapezidera brunneiventris, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 244[1].

Hab. NICARAGUA[1].

CAMPTOCARPUS.

Trapezidera (pars), Crotch, Motschulsky.

Type *Trapezidera longicollis*, Motsch. (= *prolongata*, Crotch).

Body very elongate; thorax with a distinct and acuminate basal lobe; elytra denticulate at the apex; antennæ with their seventh joint obtrigonal, internally acuminate, evidently wider than the sixth, and forming the commencement of the club. Anterior legs of the male with their tibiæ sinuate, much bent inwards and widened at the apex, the widest part inwardly angular and compressed and pubescent. Prosternum with the intercoxal plate nearly flat, widened, and widely emarginate at the apex.

1. **Camptocarpus longicollis.** (Tab. I. figg. 1, ♂; 2, ♀.)

Trapezidera longicollis, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, p. 244[1].

Trapezidera prolongata (Chevr.), Crotch, Cist. Ent. i. p. 393[2].

"Elongata, postice angustata, tota ænea, nitida, ubique subtilissime alutacea, parce subtiliter punctata, elytris obsolete subseriatim punctulatis. Long. 9 lin." (*Crotch.*)

Hab. MEXICO[2], Tuxtla, Toxpam, Vera Cruz, Playa Vicente (*Sallé*), Cordova (*Sallé*, *Höge*), Iguala in Guerrero, Jalapa, Acapulco, Teapa, Tapachula in Chiapas (*Höge*); BRITISH HONDURAS, R. Hondo, Belize (*Blancaneaux*); GUATEMALA, El Tumbador, Las Mercedes, Cerro Zunil, San Isidro, Zapote, Capetillo, San Juan in Vera Paz, Chacoj, San Gerónimo (*Champion*); NICARAGUA[1 2], Chontales (*Belt*, *Janson*); PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, David (*Champion*).

Very elongate and subcylindrical; varying in size from eleven to twenty-four millimetres; of a uniform brassy-green colour. Legs and underside nearly black. Very finely punctured above, and finely alutaceous. Head with scattered punctures, which are thicker and deeper in front; labrum short but distinct; from the antennal socket a striola passes close to the orbit, but diverges from the eye behind, and extends hardly so far back as the eye itself. Antennæ not so long as the thorax; the third to the sixth joints elongate and subequal, smooth; the seventh joint triangular, narrower and less pubescent than the succeeding four, which form a flat club. Thorax elongate, narrowed in front, the basal median lobe acuminate, the surface very finely alutaceous. Elytra widest a little below the shoulder; evenly narrowed to the apex, where they divaricate a little, and are each armed with about seven or eight serrate teeth. Front legs of the male long; their tibiæ sinuous at the base, and below the middle abruptly bent inwards, angularly widened and compressed at the tip; their tarsi with the three basal joints widened and very hairy, these joints in the female narrower and less hairy. In certain males the margin of the elytra is expanded below the middle.

It is singular that Crotch should have omitted any notice of the remarkable sexual character in this species, as in his collection are two or three males; and Motschulsky has in his description of *Trapezidera longicollis* expressly mentioned this character:—"jambes antérieures allongées, courbées, et dilatées à l'extrêmité dans l'un des sexes, cuisses renflées et un peu arquées." I have no hesitation in the application of Motschulsky's name; his specimens were only of medium size and from Nicaragua. The diagnosis given by Crotch is altogether too meagre. I have more than two hundred specimens of this insect before me, very many of which are from Cordova: except in length, it does not appear subject to variation; a few have obsolete sculpture or punctuation on the thorax, and small males have the tibiæ less strongly bent.

MERISTOBELUS.

Body shaped as in *Trapezidera*, but the elytra with their apices acuminate and divaricating, not denticulate. Head with the epistoma not well defined; a space between the antennal socket and the eye; ocular striolæ straight, not well marked; stridulating carinæ small, double, hidden by the front of the thorax. Thorax trapezoidal, without basal striæ; the base with a fine marginal line, and scarcely produced in the middle. Scutellum obtrigonal. Legs not very long, their femora thin, not roughened; tarsi slightly hairy beneath as in male *Teretilanguria*. Prosternal process wide, not margined nor foveolate, truncate at the apex, very even. Ventral apical segment of the abdomen rounded at the apex, not punctured; hairy only at the sides. Apex of the elytra not hairy beneath. Sex uncertain (♀?).

I place in this genus a single species from Mexico. Two examples only, both possibly females, of this are known to me.

1. Meristobelus forcipatus.

Æneus; capite distincte parcius, prothorace obsolete crebrius, punctatis; elytris obsolete punctato-striatis, cum apicibus acuminatis, divaricatis, et paullulum reflexis; corpore subtus glabro; pedibus piceis, geniculis tarsisque nigricantibus. Long. 13 millim.

Hab. Mexico, Chinantla (*Sallé*).

Resembling, but rather smaller than average specimens of, *Trapezidera ænea*, but at once distinguished by the curious bifurcate apices of the elytra. The antennæ are bluish-black, with their club formed as in *Trapezidera*, the four terminal joints duller and much wider than the seventh. The head does not present any striking characters; the epistoma is hardly marked by a faint straight impression; the antennal sockets are deep, the ridge above strong (above the eye the ridge is very little raised). The whole insect is narrower before and behind. The tarsi are of average width, rather wide if the examples are females (there is no means of judging of the sex without destroying the specimens); finely pubescent above, and with short matted hairs beneath.

TERETILANGURIA.

Teretilanguria, Crotch, Cistula Ent. i. p. 394 (1876).

This genus was proposed by Crotch for a large and common South-American insect described by him as *Teretilanguria kirschii*, with which *Languria basalis*, Guérin (Icon.

Règne Anim. Ins. p. 314) is congeneric. In his very short diagnosis of the characters the only ones of importance are that the thorax is not margined at the base, and that the head bears "two stridulating plates." The other characters mentioned are common to *Trapezidera* and *Dasydactylus*, and the last-named one does not seem satisfactory, for certain *Dasydactyli* have minute files on the base of the head. Nevertheless the genus is quite a natural one, and possesses good characters, both in the sulci near the eyes and in sexual distinctions; I give a fresh definition:—

Head with the epistoma transverse or nearly square, quite distinct from and produced well in front of the antennal fossæ; labrum membranous, only corneous at its front edge; orbital striolæ deep and sulciform, double behind the middle of the eye, the orbital canthus raised behind. Antennæ short, their club elongate; the seventh joint smaller than either of the four apical ones. Thorax usually trapezoidal and very shining; slightly more convex, and with the front angles more reflexed, in the males; the base without marginal line. Tarsi (especially the front pair) spongy beneath; with short ciliæ, and fine hairs above. Front femora of the male subclavate, thickened outwardly, and on the inner side finely sulcate, or with very fine tubercles; they are also a little curved. Apical segment of the male with an arcuate excision, which is not symmetrical, being most cut out on the right side, the apex between being acuminate and finely carinate; the excision on each side is ciliate.

This latter character is most important, and in combination with the sulci will determine the male sex of any of the species known to me.

1. **Teretilanguria panamæ.** (Tab. I. figg. 5, 5 *a*, ♂.)

Teretilanguria panamæ, Crotch, Cist. Ent. i. p. 394[1].

"*T. kirschii* valde affinis, sed thorace antice paullo latiore, angulis anticis incrassatis; capite antice fortius punctato lineisque frontalibus minus parallelis distincta videtur."

Hab. PANAMA[1], Volcan de Chiriqui, Bugaba (*Champion*).

I do not find any example of this species in Crotch's collection; but I have no doubt that about a dozen specimens captured by Mr. Champion are referable to it, differing as they do from *T. kirschii* by the strong punctuation of the head. Crotch, however, was deceived about the difference in the form of the thorax. Though the sexes differ as already mentioned, I can see absolutely no difference in this respect or in the structure of the head between these and typical *T. kirschii*, to which, therefore, it is very closely allied indeed.

2. **Teretilanguria metallica.**

Ænea; prothorace distincte acuminate punctato, depressiusculo; pedibus nonnunquam rufis. Long. 20–24 millim. ♂ ♀.

Mas femoribus anticis parum incrassatis et curvatis, intus minute tuberculosis; segmento ventrali apicali utrinque exciso, latere dextro profundius exciso, apice acuminato et carinato.

Hab. NICARAGUA, Chontales (*Belt*); COSTA RICA (*Van Patten*).

Very close to *T. panamæ*, and possibly not distinct therefrom; yet differing in being entirely of a brassy colour, in the thorax of the male not perceptibly more convex than that of the female, in the apical segment of the male more profoundly cut out on the right side (although it is not cut symmetrically in any of the species), and also in its rather narrower form.

The species of this genus are apparently very closely allied, and I believe that the above given distinctions represent a separate species. I have as yet seen but three specimens, two of which are from Costa Rica.

3. **Teretilanguria nigro-ænea.**

Nigro-ænea, nitida; capite prothoraceque crebre et distincte punctatis, illo trapezoideo; elytris obsolete substriatis, punctis vix discretis, apicibus rotundatis et minute denticulatis. Long. 14 millim. ♂ ♀.

Hab. GUATEMALA, Panajachel, Tamahu (*Champion*).

This insect is so similar in size and colour and general appearance to *Trapezidera ænea* and to *Dasydactylus chalceus*, that, apart from generic characters, it is very difficult to separate it. A comparison with these species will be better than any further description: from the former, the more strongly punctate head and thorax, darker colour, and the want of any basal marginal line to the thorax form sufficient superficial characters of distinction; from the latter, in addition to these differences, the structure of the tarsi and the very obsolete puncturing of the elytra differentiate it; the elytral teeth at the same time are stronger in *T. nigro-ænea*, and in the male the femora are scarcely roughened, though longer and stouter in all the legs. Two specimens.

4. **Teretilanguria versicolor.** (Tab. I. figg. 6, ♀; 6 *a*, ♂.)

Supra nigro-subviridis vel viridi-ænea, infra flava, variegata, nitidissima; capite prothoraceque minute sparse punctatis, illo ore, basi maculis nonnullis et infra, hoc lineis duabus vel maculis tantum in margine antico femoribusque basi et infra, flavis; abdomine segmentis singulis nigro maculato. Long. 14½–15 millim. ♂ ♀.

Hab. MEXICO, Toxpam (*Sallé*), Cordova (*Höge*); GUATEMALA, Purula, Sabo, San Juan in Vera Paz, Cubilguitz (*Champion*).

Head with the eyes rather prominent; antennæ black; face often much variegated with yellow, the space round the base of the antennæ and the orbit being sometimes so. Thorax quadrate, rather convex, not differing much in the sexes; its underside, and two spots from which lines proceed from the front margin, yellow, these lines sometimes reaching the base and often only represented by the spots. Elytra smooth, green or blackish. Abdomen yellow; the angles of the metasternum and each segment with a blackish spot. The apex of the abdomen is excised unsymmetrically, but not so deeply in the males as in the preceding species.

5. **Teretilanguria ——?**

Hab. PANAMA, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

A single specimen of a very narrow *Teretilanguria* with brownish elytra, but otherwise coloured as *T. panamæ*; it cannot be properly characterized in the absence of the male.

6. **Teretilanguria ——?**

Hab. MEXICO, Jalapa (*Höge*); GUATEMALA, Purula (*Champion*).

Two specimens, one from each of the above localities, and not altogether agreeing with each other, present a very puzzling aspect. They appear to be very closely allied to *T. nigro-ænea*, but the eyes are less prominent and the cephalic structure is rather that of *Trapezidera*. They probably belong to another genus, but the evidence is insufficient for their proper assignment.

LANGURIA.

Languria, Latreille, Hist. Nat. Crust. et Ins. iii. p. 209 (1802); Crotch, Trans. Am. Ent. Soc. iv. p. 349 (1873).

Section A. *Body beneath black.*

a. *Head red.*

1. **Languria læta.**

Languria læta, Lec. Proc. Acad. Phil. vii. p. 159 (1854)[1]; Crotch, Trans. Am. Ent. Soc. 1873, p. 351[2]; Cist. Ent. i. p. 385[3].
Languria melanoptera, Sturm, in litt.

Hab. NORTH AMERICA, Kansas River[1 2 3], Colorado[2 3], Texas[2 3].—MEXICO, Oaxaca (*Boucard*, *Sallé*), San Luis Potosi (*Dr. Palmer*), Paso del Macho, Jalapa (*Höge*).

This species is only distinguished from *L. sanguinicollis*, Chevr., by having the interstices of the punctured striæ of the elytra with a very fine series of small punctures, the punctures varying in strength. This is what I suppose to be implied by Crotch's remark "distinct by the punctate interstices;" but as he does not include *L. sanguinicollis* in the North-American species, nor say from what it is distinct, the remark is ambiguous.

2. **Languria sanguinicollis.**

Languria sanguinicollis, Chevr. Col. Mex. Cent. i. fasc. 4, no. 99 (1834)[1].

Hab. NORTH AMERICA, Texas (*Belfrage*).—MEXICO[1], Parras in Coahuila (*Dr. Palmer*), Paso del Macho, Villa Lerdo (*Höge*).

The type is in Crotch's collection; this specimen being now before me, I am able to

give a fresh description:—Head and thorax clear red, very finely and closely but obsoletely punctured. The latter is oblong quadrate; the base rather narrower than the front, truncate, scarcely sinuate, and finely margined; the basal striolæ represented by two triangular foveæ. Antennæ, legs, pectus, and abdomen black. Elytra black; the seven striæ, and the sutural and submarginal striæ also, with distinct, close, but not very deep punctures; the interstices not quite smooth, the sculpture consisting of very obsolete punctures and irregular elongate impressions. The prosternum is nearly smooth, faintly transversely strigose in the middle, the sides with a few scattered punctures.

b. *Head black.*

3. **Languria capitata.**

Nigra; prothorace subquadrato, postice vix angustato, modice convexo, rufo, margine antico tenuiter nigro, crebre subtiliter punctato; elytris punctato-striatis, interstitiis crebre seriatim punctulatis. Long. 8½–10 millim.

Hab. Mexico (*coll. Gorham*), Presidio (*Forrer*).

Head black, sparsely punctured; piceous or rufous towards the base and beneath. Thorax rather shorter than in *L. sanguinicollis*; the sides very little rounded, except at the front, narrowing very slightly to the base, the latter nearly straight; the basal striolæ faintly impressed and short. Elytra as in *L. læta*; appearing at first sight multistriate, owing to the series of interstitial punctures being almost as distinct as the striæ. Abdomen nearly smooth, the apical segment punctured and finely alutaceous. Legs black, the front coxæ reddish.

This insect is allied to *L. læta*; from *L. collaris* the form of the thorax at once separates it.

Three specimens, also one in my own collection.

4. **Languria aculeata.** (Tab. I. fig. 17.)

Picea, nitida; capite nigro; prothorace rufo; elytris nigro-cæruleis, obsolete punctato-striatis; antennarum clava rufo-testacea; pedibus piceis, basi rufis. Long. 9 millim.

Hab. Mexico, San Andres Tuxtla (*Sallé*).

Head black, minutely punctured. Antennæ with a narrow, elongate, and laxly articulated club of five joints; the apical four joints equal in breadth, the seventh joint (the basal one of the club) triangular and narrower; from the base to the seventh joint they are pitchy, the club itself being clear testaceous-red. Thorax rather longer than wide, the sides rounded, the disc convex, the base margined, the hind angles rectangular; without striolæ. Elytra steel-blue at the base, black towards the apex, distinctly punctate-striate; with transverse depressions (possibly not normal but present in the three specimens before me), and consequently somewhat uneven; interstices smooth; their apices strongly acuminate and polished, and, in one example, divaricate; the

sutural stria continued to the apex. Beneath the head and prothorax are coloured as above; the mouth and trophi (except at the tips) are rufous; the prosternum is very smooth, its process strongly arcuate, the apex being almost vertical and slightly excised, and the sides thickened and raised; the breast and hind body are piceous, nearly black; and the apical segment is smooth, sparsely and not strongly punctate.

Three specimens: these present no sexual mark of distinction, unless the more divaricate apices of the elytra be such. I have adopted the name under which they were separated in Sallé's collection.

5. **Languria simplicicollis.**

Languria simplicicollis, Say, Bost. Journ. Nat. Hist. i. p. 201 [1]; Complete Writings, ii. p. 670.

Hab. Mexico [1].

I am unable to identify this species from the very brief description.

Section B. *Body beneath red.*

6. **Languria cyanipennis.** (Tab. I. fig. 15.)

Languria cyanipennis, Crotch, Cist. Ent. i. p. 384 [1].

"*L. mozardi* affinis, sed major, thorace magis crebre sed minus fortiter punctulato, basi ante scutellum paullo lobato. Long. 4½ lin."

Hab. Mexico [1], Toxpam, Cordova, Playa Vicente (*Sallé*), Colima, Paso del Macho (*Höge*); Guatemala, San Juan and Panima in Vera Paz (*Champion*); Nicaragua, Chontales (*Belt*).

The species thus briefly characterized by Crotch has the head, thorax, body, and legs in part red; the apical segment of the abdomen is, however, black, and the apical half of the femora, the tibiæ in part, and the tarsi, blackish. The antennæ are black, but sometimes the basal six joints are red, and frequently one or two are so. The elytra are steel-blue, with very lightly impressed striæ, the striæ delicately but closely punctured; the interstices appear nearly smooth, though usually very finely wrinkled, and occasionally (viz. in the example from San Juan) the multistriate appearance is seen. Two Mexican specimens in Sallé's collection have the elytra black with a faint brassy tint, and an example from Panima and another from Colima have the punctures of the striæ deep and distinct, but I do not consider these differences of specific value. The apical segment is depressed and pubescent; red at its base, but black in the greater part.

It is impossible to identify this insect, which has the body red, with either *L. simplicicollis*, Say, or with *L. sanguinicollis*, Chevr., as both those species are expressly described as having the breast and abdomen black.

Crotch's type and other specimens of *L. cyanipennis* were from Chevrolat's collection; they are labelled as having been collected by Sallé.

ACROPTEROXYS.

Corpus elongatum (elytris apicibus aculeatis, lateribus subparallelis), supra et infra fortiter punctatum, Prosterni processus intercoxalis ad apicem latior, truncatus, punctatus, parum declivus. Striola ocularis nulla. Tarsi subtus spongiosi, haud late ciliati. Antennarum clava angustata, quinque-articulata. Sexus differentia latet.

The species for which I propose this new generic name are somewhat similar to those of the genus *Langurites*. The principal diagnostic character is the peculiar way in which the elytra are acuminate at the apex, the apices being neither toothed nor excised. The sutural margin is nearly straight, but the lateral margin is brought in to meet it acutely from about one fifth of their length. The striation of the elytra is distinct, and the punctures deep. The form of the thorax is very much as in *Langurites*, parallel and rather flat and acutely margined. The eyes are finely faceted, and there is no ocular striola. The species, *A. caudatus*, which I regard as the type of the genus *Acropteroxys* is coarsely punctured above and beneath; and has the front part of the prosternum very rugose, and the rugæ interspersed with punctures. One or two other species which I refer to it are allied to *Languria gracilis*, Newman, and are more finely punctate than *A. caudatus*, but have the elytra similarly acuminate. *L. gracilis* will probably be found to be congeneric, its elytra, however, are less acuminate; the general flat depressed form is the same, as is the widened apex and sculpture of the prosternal process.

I include two species in this genus; one is apparently of wide distribution, ranging from the Middle United States to Guatemala, the other from Mexico.

1. **Acropteroxys caudatus.**

Languria caudata, Sturm, in litt.

Nigro-æneus, nitidus; capite prothoraceque crebre fortiter punctatis; elytris fortiter punctato-striatis, apicibus acuminatis et lævigatis; corpore subtus fortiter punctato; prosterno antice rugoso. Long. 9–11 millim.

Hab. Mexico (*ex coll. Sturm*), Yolos (*Sallé*).

Head very coarsely punctured; eyes rather prominent, moderately but not coarsely faceted; without striolæ. Thorax very coarsely punctured; transversely rugose beneath, the rugæ with punctures irregularly interspersed, especially distinct on the sides and on the prosternal process, the latter broad and wider at the apex; the sides are very straight, and the length is one and a half times the breadth. Elytra with the shoulders much wider than the thorax; the sides almost parallel for three fourths of their length, acuminate beyond; punctate in series, the punctures coarse and often confluent. Breast and abdomen punctured, the basal segment of the latter more densely and coarsely than those succeeding. Legs and antennæ blackish, the former slightly pitchy at the base, the latter with the third joint longer than the fourth.

Only three specimens have come under my notice. Two of these are from Yolos; the third is from Sturm's collection, without special locality from Mexico.

2. **Acropteroxys gracilis.** (Tab. I. figg. 18; 19, var.)

Languria gracilis, Newm. Ent. Mag. v. p. 390 [1]; Crotch, Trans. Am. Ent. Soc. 1873, p. 351 [2]; Cist. Ent. i. p. 386 [3].

Languria bicolor, Latr. Gen. Ins. et Crust. iii. p. 65, t. 11. f. 11 [4].

Languria latreillei, Lec. Proc. Ac. Phil. vii. p. 160 [5].

Languria nigriceps, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, p. 242 [6].

Nigro-æneus, nitidus, capite prothoraceque parce sat distincte punctatis, hoc subtilissime alutaceo, lateribus leviter sinuatis, rufo, vitta mediana basi latiore nigro-ænea; elytris distincte punctato-striatis, striis ad apicem obsoletis; mesosterno fortiter punctato. Long. 8–11 millim.

Hab. NORTH AMERICA, United States [1 2 3 4 5 6].—MEXICO, Ventanas (*Forrer*), Guanajuato (*Höge*, *Sallé*), Orizaba, Puebla, Toxpam (*Sallé*), Irapuato, Chilpancingo in Guerrero (*Höge*); GUATEMALA, Capetillo (*Champion*).

Var. Prothorax rufus, disco vix infuscato.

Hab. MEXICO, Cordova (*Höge*), Toxpam (*Sallé*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*).

Var. Prothorax totus nigro-æneus.

Languria inornata, Randall, Bost. Journ. Nat. Hist. ii. p. 48 [1].

? *Languria obscura,* Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, p. 243 [2].

Hab. NORTH AMERICA, United States [1 2].—MEXICO, Ventanas (*Forrer*), Cordova (*Höge*, *Sallé*).

The numerous synonyms quoted above show that this is a widely distributed and also a variable insect. In the series in our collection all the varieties are included; but the Mexican specimens have the thorax usually black, or black with only the anterior angles with a red spot; there are, however, a few specimens with the thorax entirely red, with only a faint trace of a fuscous cloud on the part usually occupied by the vitta. I cannot therefore doubt that these are all varieties of one species, as the punctuation is identical. A single specimen only was met with by Mr. Champion in Guatemala. The punctuation of the mesosternum is a good specific character, but its red colour, mentioned by Crotch, does not hold good in dark specimens.

DASYDACTYLUS.

Pedes antici longi (maris femora et tibiæ intus asperi, tarsis setosis); tarsi latissimi. Antennarum clava quinque-articulata plerumque brevis. Striola suborbicularis postice divergens, brevis. Prothorax oblongo-quadratus; maris convexus, antice latior. Prosternum leviter arcuatum, apice truncato vel exciso, marginatum, interdum utrinque bifoveolatum. Elytrorum apicibus denticulis sex vel septem armatis, rotundatis vel truncatis.

This genus has some features in common with the type of *Goniolanguria*, and indeed one species, *D. thoracicus*, would come under Crotch's definition of that genus, for a minute carina for stridulating appears on the crown of the head; but in more essential characters the species here brought together have a natural unity of structure which the type of *Goniolanguria* has not in common with them. Indeed the species which forms that type is, so far as I have seen, "sui generis."

The species which I here unite have also a clear affinity with *Trapezidera ænea*; the prosternum differing only in having its apex more depressed, and therefore not flat but arcuate, and in some species the apex excised but not deeply.

The great difference consists in the sexual characters: the males having hairy and strongly dilated tarsi and roughened femora and tibiæ to both the front and middle pairs of legs; while the head here is uniform in both sexes, whereas in *Goniolanguria* the left side is asymmetrically swollen. I have not seen specimens of any species except from North and South America thus characterized; they seem to be closely allied, and locally restricted, and must be numerous.

Section A. *Processu prosternali apice truncato.*

1. **Dasydactylus buprestoides.** (Tab. I. fig. 7, ♂.)

Æneus; antennis breviusculis, nigris; capite fortius, prothorace subtilius, punctatis, crebre alutaceis; elytris subtiliter punctatis, vix striatis, apice oblique truncatis et denticulatis; abdomine piceo, lateribus dilutioribus; tarsis nigris. Long. 16 millim. ♂ ♀.

Mas prothorace convexiore, postice latiore; femoribus tibiisque anticis et intermediis intus asperatis.

Hab. Mexico, Cordova (*Höge*).

The head and thorax in this species are rather thickly and strongly punctured, and their entire surface is finely alutaceous (a character by which the female of this insect may be known from a *Trapezidera* also occurring at Cordova); the reflexed edge of the latter is obliquely and finely wrinkled. The prosternum is rugulose; the process nearly smooth, with a double fossa near its apex, its apex truncate. The thorax of the male is very convex in front, and wider than the elytra; that of the female trapeziform, and hardly so wide at its base as the elytra; the base is very finely margined, with the basal striola only just indicated by a punctiform impression. The elytra taper very gradually but decidedly; their apex is obliquely truncate, though somewhat rounded in the females, and denticulate; their punctuation fine and close and confused, the striæ being hardly defined; here and there the punctures form series. The underside is smooth (excepting the mesosternum); the apical segment of the male faintly carinate, and obsoletely punctate and ciliate, that of the female very similar. The general colour is brassy, the antennæ being bluish-black.

But few specimens of this species were collected by Herr Höge. The females so strongly resemble that sex of a form of *Trapezidera ænea*, that *T. buprestoides* may easily have been overlooked as distinct from that insect. The males have much longer legs, of which the two front pairs have strongly roughened femora and tibiæ; even the femora of the hind pair in this species are a little roughened.

2. **Dasydactylus subulatus.** (Tab. I. fig. 13, ♂.)

Rufo-piceus, supra viridi-nitens, elytris viridibus, antennis tarsisque nigris; capite prothoraceque fere glabris

elytris tenuissime punctato-striatis, interstitiis punctulatis, apicibus rotundato-subtruncatis et denticulatis; prosterno truncato. Long. 11–13 millim. ♂ ♀.

Mas prothorace convexiore latioreque; pedibus anticis intus leviter rugosis, tarsis fulvo-hirtulis.

Hab. PANAMA, Bugaba (*Champion*).

The species of this section have a greater resemblance to the genus *Goniolanguria* than those which follow; I do not think it necessary, however, at present to give them generic rank, but if I am not mistaken the following points of difference will unite a group including some undescribed species from South America:—the legs very thin and long; the head very depressed and very smooth, the eyes prominent; and the apical segment of the abdomen almost keeled, the central line being a definite ridge, but not raised, and also subacuminate. *D. subulatus* is one of the brightest of the Central-American "Languriides," the elytra being usually of a bright metallic green inclining to rufous at the base, while the head and thorax are piceous with a green reflection. The mouth is rufous; the antennæ of moderate length, with an elongate club of five joints. The thorax is half as long again as wide; in the female the sides are nearly parallel at the base, and from the middle narrowed and rounded a little to the front angles; the base has a transverse depression terminated on each side by the punctiform but obsolete striolæ, and the impressions on this are ill-defined, and the central lobe is short. Scutellum transverse. The elytra at the base are as wide as the thorax. The colour beneath is more or less evenly rufous; and the legs are clouded towards the knees, and on the tibiæ. The roughening of the front femora is not very distinct, and as it is present in a small degree in the females does not form a good sexual diagnostic. In the longer hairs of the front tarsi there is as much difference as usual.

A good series of this insect was secured by Mr. Champion.

3. **Dasydactylus glabricollis.**

Biceus, infra dilutius, supra saturatius et æneo-micans, nitidissimus; capite prothoraceque fere glabris; elytris subtiliter punctato-striatis, interstitiis crebre punctulatis, apicibus latius rotundatis et denticulatis; prosterno truncato, lævi. Long. 10–12 millim. ♂ ♀.

Mas tarsis anticis fusco-hirtulis.

Hab. MEXICO, Jalapa (*Höge*), Juquila, Cordova, Tuxtla (*Sallé*); BRITISH HONDURAS, R. Hondo (*Blancaneaux*); GUATEMALA, Purula (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Smaller than *D. subulatus*, and with a shorter and consequently more quadrate thorax. The elytra are wider at their base than any part of the thorax. The femora in the male appear to be quite smooth, and the tibiæ seem only to differ from those of the female by their greater length. Although there are but a few specimens from each of the localities, and these differ a little in size and colour, I believe they represent but one widely distributed species.

4. **Dasydactylus lævicollis.**

Nigro-subæneus, corpore subtus cum pedibus rufo-piceis, genibus, tarsis et antennis nigro-cæruleis; capite fere lævi, prothorace oblongo, minute crebre punctato, his cæruleo-micantibus; elytris punctato-striatis, interstitiis crebre et confuse punctulatis, apicibus sublævibus, rotundatis, et minute denticulatis; prosterno truncato, apice parum depresso. Long. 10–12 millim. ♂ ♀.

Mas pedibus præsertim anterioribus longis; femoribus tibiisque anticis et intermediis intus asperatis; tarsis anticis hirtulis, crinibus aureis.

Hab. Mexico, Toxpam, Cordova (*Sallé*).

The head and thorax are very minutely and obsoletely punctured (so as to appear almost glabrous under an ordinary lens of an inch or longer focus), and bluish in tint. The thorax is oblong, narrow in front; the sides in the male are slightly rounded, in the female nearly straight; the base is wider than the front in both sexes, and has in the middle a faint transverse depression along which are a few larger punctures, the margin very finely reflexed, the striolæ indicated by punctiform impressions. The elytra are decidedly wider at the shoulders than the thorax, blackish-bronze in colour, and thickly and confusedly punctured, the punctured striæ being distinct towards the base, but confused with the interstitial punctuation towards the apex.

The form of the prosternum, or rather of its intercoxal process, is very important in distinguishing the species of this genus: in this insect it is slightly arcuate, and the apex (this part being less depressed than in some allied species) is truncate, or at all events very slightly emarginate; it is also smooth. The antennæ are moderately long; the third, fourth, and fifth joints elongate, the sixth shorter than those preceding, but still longer than the seventh, the latter triangular in shape; these joints are all more or less shining, bluish-black, while the club is black and opaque, the latter being rather laxly articulated but still wide. The tarsi are clothed beneath with soft golden hair, which is longer in the male in the front pair.

5. **Dasydactylus puncticeps.**

Nigro-æneus, nitidus, corpore subtus pedibusque rufo-piceis, antennis tarsisque nigris; capite fortiter parcius, prothorace minus fortiter sed crebrius, punctatis; elytris crebre disperse punctatis, vix striatis, apicibus acuminatis et subtiliter denticulatis. Long. 11–15 millim. ♂ ♀.

Mas prothorace convexiore, postice latiore; femoribus et tibiis anticis et intermediis asperatis.

Hab. Mexico, Toxpam (*Sallé*).

Head thickly and strongly punctulate, the crown less thickly so; orbital striolæ well pronounced, scarcely diverging from the eye behind. Thorax trapezoidal, but considerably narrower in front than at the base; densely but finely punctured (not alutaceous as in *D. buprestoides*); base rather widely and flatly depressed as far as the punctiform impression. Elytra in large specimens narrowed behind (as in *D. buprestoides*), in smaller ones less distinctly so; densely punctate; the punctures in one small male, at least at the base, indicate striæ, but in larger specimens they are very evenly dispersed, in the single female example they form striæ; the apices are not truncate,

but rounded and with about seven denticules on each. The legs are pitchy-red, the knees and the tips of the tibiæ and tarsi blackish, and very long in both sexes. The antennæ are black, the apical five joints opaque, these latter forming an elongate and not very wide club.

This insect is labelled "*Languria ænea*, Chevr. (*ahena*, Sturm)," in Sallé's collection, but is generically distinct from the types of those species. From *D. buprestoides* it is to be distinguished by the darker brassy-black colour, the rounded tips of the elytra, and the punctuation of the head and thorax. The punctuation of the elytra in this and other species is a variable and uncertain character.

Five specimens.

6. **Dasydactylus chalceus.**

Trapezidera chalcea, Crotch, Cist. Ent. i. p. 393 [1].

Niger, subtus cum pedibus picescens; capite prothoraceque minute disperse punctatis, fere lævibus, his æneo-micantibus; elytris perobsolete punctato-striatis, interstitiis crebre punctulatis, apicibus rotundatis et minute denticulatis; prosterno truncato. Long. 11–15 millim. ♂.

Mas femoribus anticis et intermediis intus asperatis; tarsis fulvo-pilosellis.

Hab. MEXICO [1], Toxpam; GUATEMALA, San Gerónimo, San Juan in Vera Paz (*Champion*).

The diagnosis is taken from the type in the Cambridge Museum. The essential character by which this species differs from that here described under the name of *D. puncticeps* is the nearly smooth head. Crotch did not notice the roughening of the femora, not having seen females; the single specimen in his collection is a male of the larger size, and with it I associate three other examples.

7. **Dasydactylus nitidus.**

Nigro-subæneus, nitidus, pedibus nigro-piceis, antennis tarsisque nigris; capite crebre, prothorace obsoletius, punctatis; elytris creberrime substriatim punctatis, apicibus lævigatis, rotundatis, et leviter denticulatis; prosterno apice truncato. Long. 10–12 millim. ♂ ♀.

Mas prothorace convexiore, basi latiore; pedibus anticis longioribus, femoribus subtilissime asperatis, tarsis valde hirtulis.

Hab. MEXICO, Cordova, Jalapa, Tapachula in Chiapas (*Höge*).

This species is very close to *D. puncticeps*, and separated from it chiefly on the following grounds:—the antennæ are not so long, and have the third to the sixth joints very evidently shorter; the legs, especially the middle and hind pairs, also shorter. *D. nitidus* is also a rather smaller insect; and has the thorax less widened at the base, and the femora less distinctly rough in the males.

8. **Dasydactylus puncticollis.**

D. nitidi summa affinitate, nigro-æneus, nitidus, subtus cum pedibus piceus, antennis tarsisque nigris; capite prothoraceque crebre sat fortiter punctatis; elytris distinctius punctato-striatis, apicibus sublævigatis et vix denticulatis; prosterno apice truncato. Long. 10–12 millim. ♂.

Mas prothorace convexo, antice angustato; pedibus anticis longis, femoribus intus asperatis, tarsis valde hirtulis.

Hab. Mexico, Cordova (*Sallé*).

Brassy above, the body beneath pitchy-black, the legs pitchy red; antennæ bluish-black, the club (as in other species where no difference is specially mentioned) five-jointed and duller than the basal joints, the seventh or first club-joint being much narrower than those following and less pubescent. Head rather sparingly, the thorax thickly and distinctly, punctured; scutellum transverse. Elytra rather more distinctly punctate-striate than in *D. nitidus*; the sutural stria impressed more deeply at the apex, but the apex itself is not so acuminate as in *D. nitidus*. Prosternum rather broad, arcuate, its apex truncate but depressed.

Three males from Sallé's collection are all I have yet seen.

Section B. *Processu prosternali apice exciso.*

9. **Dasydactylus thoracicus.**

Niger, supra æneo-micans, subtus cum pedibus piceus, his geniculis tarsisque nigris; capite prothorace subtilissime parce punctulatis, fere glabris; elytris basi quam prothorax haud latioribus, ad apicem valde angustatis, apicibus truncatis et denticulatis; prosterno leviter emarginato. Long. 10 millim. ♂.

Mas prothorace quam elytrorum basis latiore, convexo; pedibus longis, femoribus anticis et intermediis intus asperatis.

Hab. Mexico, Toxpam, Cordova (*Sallé*).

This species is distinguished among its very near allies by its rather short and convex thorax being as wide as the base of the elytra in the male; by the elytra being rather distinctly punctate-striate, with the interstices sparingly but serially punctured, and their apices obliquely truncate; and by the prosternal process being arcuate and excised at the apex (but not deeply), the margin being reflexed at the angles. In one example there is what appears to be a stridulating file on the crown of the head, and this might cause it to be referred to Crotch's genus *Goniolanguria*. This is not, however, to be seen in other males; and in other characters, as the structure of the legs and tarsi, the absence of the asymmetrical gena, &c., it diverges from the type of that genus, which has been but imperfectly characterized by Crotch.

This insect perhaps comes nearest to *D. punctisternum*; it is also closely allied to *D. hondoensis*, though larger and blacker.

10. **Dasydactylus punctisternum.**

Niger, cæruleo-micans; capite prothoraceque subtilissime minute punctatis, fere glabris; elytris obsolete punctulatis, apicibus rotundatis et vix denticulatis; prosterno transversim rugoso, processu intercoxali rugoso-punctato. Long. 9–11 millim. ♂ ♀.

Mas prothorace latiore et convexiore; pedibus anticis et intermediis longis, femoribus tibiisque interne asperatis.

Hab. Mexico, Playa Vicente, Teapa in Tabasco (*Höge*, *Sallé*).

A species easily to be separated from *D. lævicollis*, which it rather nearly resembles in sculpture, by its somewhat stouter and shorter form, blue-black colour, and the coarse sculpture of the prosternum. The body beneath is black; and the very obsolete denticulation of the tips of the elytra is noticeable, showing as it does how this character fails to be of much generic importance.

Three specimens in Sallé's collection.

11. **Dasydactylus zunilensis.** (Tab. I. figg. 8, 8 *a*, ♂; 9, ♀.)

Nigro-subæneus, nitidulus, corpore subtus pedibusque saturatius piceis, antennis tarsisque nigrescentibus; capite prothoraceque parcius subtiliter punctatis; elytris leviter punctato-striatis, apicibus rotundatis et denticulatis; prosterno ad apicem exciso, sub-bimucronato. Long. 13 millim. ♂ ♀.

Mas prothorace latiore et convexiore; pedibus anticis longioribus, femoribus anticis et intermediis leviter asperatis, tarsis valde hirtulis.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

The head and thorax of this species are rather thickly and minutely punctured, the latter less thickly than the former; and the elytra have series of very fine punctures and the interstices nearly smooth. The thorax is strongly depressed before the base, and has a very faint indication of a central channel in the depression; a minute impression represents the basal strigæ, the transverse impression between being fairly well marked and punctured. The amount of dilatation and the hairy clothing of the front tarsi in the male is well marked in all the species of this section, the three dilated joints having the soles clothed with whitish silky hair and the sides with long black ragged hair.

12. **Dasydactylus longicollis.**

Nigro-subæneus, nitidus, angustus, pedibus rufo-piceis, antennis tarsisque nigris; capite prothoraceque crebre subtiliter punctatis; elytris punctato-striatis, angustulis, ad apicem acuminatis, apicibus leviter denticulatis et rotundatis; prosterno ad apicem acute exciso, sub-bimucronato. Long. 12 millim. ♂ ♀.

Mas prothorace longiore et antice leviter convexiore; pedibus anticis longioribus, femoribus leviter asperatis, tarsis valde hirtulis.

Hab. GUATEMALA, Purula (*Champion*); NICARAGUA, Chontales (*Janson*).

This species agrees very closely with *D. zunilensis* in several of its characters; it is, however, narrower, the base of the elytra especially, which hence appear very cylindrical and less narrowed to the apex, and the thorax of the male is also narrower; the punctuation of the head and thorax is less thick; the elytral series of punctures are distinct at the base, but towards the apex the interstitial punctures are more numerous and here become confused with the striæ. The colour above and beneath is blacker than in *D. zunilensis*. The typical specimens are a male and a female from Chontales.

13. **Dasydactylus subtilior.**

Niger, obscure subæneus, nitidus; capite prothoraceque minutissime punctulatis, fere glabris, hoc oblongo cum lateribus modice rotundatis; elytris basi angustulis, sat fortiter punctato-striatis, interstitiis fere lævibus, apicibus obsolete denticulatis; prosterno ad apicem valde bimucronato. Long. 10–13 millim. ♂ ♀.

Mas prothorace convexiore; pedibus anticis longioribus, femoribus anticis leviter asperatis, tarsis valde hirtulis.

Hab. MEXICO, Toxpam, San Andres Tuxtla (*Sallé*), Cordova (*Höge*); BRITISH HONDURAS, Belize, R. Hondo (*Blancaneaux*).

This species bears a very close resemblance to *D. thoracicus*, but the elytra are not so pointed towards their apex, and are not truncate; the prosternum is decidedly and strongly bimucronate at the apex of the process, and also differs in other respects. It is really more nearly allied to *D. hondoensis* and *D. picipes*, three species extremely difficult to discriminate; the head and thorax in *D. subtilior* are, however, so very finely punctured that they appear glabrous under an ordinary pocket-lens of an inch and a half focus. *D. subtilior* is also larger, blacker, and has a longer thorax than *D. hondoensis*; and the thorax of the male narrows in front, where it is narrower than at the base.

In the specimen from Cordova the interstices of the elytra are punctulate; but in others, as the one from Tuxtla (♀), they are nearly smooth, though finely rugulose; in the British Honduras specimens all the punctures are more obsolete, so that I do not think any good characters can be drawn from the elytral punctuation. I think, however, that the very fine punctuation of the head and thorax is constant.

14. **Dasydactylus cribratus.**

Niger, subtus cum pedibus piceus; capite prothoraceque crebre distincte sat fortiter punctatis, hoc oblongo; elytris fere cylindricis, punctato-striatis, apicibus subtiliter denticulatis; prosterno punctulato, processu apice sub-bimucronato. Long. 6–9 millim. ♂ ♀.

Mas prothorace convexiore, basi latiore, femoribus anticis et intermediis asperatis; tarsis anterioribus minus late dilatatis, hirtulis, subtus albidis.

Hab. MEXICO, Teapa in Tabasco, Tapachula in Chiapas (*Höge*).

A species allied to *D. hondoensis*, but easily distinguished by the long thorax and punctulate prosternum. The thorax is longer than in any species yet described, except *D. longicollis*. The punctures on the prosternum are large and scattered; the process is smooth but longitudinally furrowed and uneven. The legs of the male are long and as in *D. hondoensis*; but the front tarsi are much less widely hairy, and are narrower. The thorax is less shining than in its near allies, owing to the punctures, though distinct, being thick. Four specimens were captured by Herr Höge during his second expedition to Mexico.

15. **Dasydactylus hondoensis.** (Tab. I. fig. 10, ♂.)

Niger, subtus cum pedibus piceus, antennis, geniculis tarsisque nigris; capite prothoraceque subtiliter parce punctatis; elytris punctato-striatis, apicibus rotundatis et angustatis, stria suturali ad apicem valde impressa; prosterno exciso, apice sub-bimucronato. Long. 10 millim. ♂ ♀.

Mas prothorace convexiore, antice latiore; femoribus anticis et intermediis asperatis, tarsis nigro-hirtulis.

Hab. MEXICO, Jalapa, Frontera in Tabasco (*Höge*), Tuxtla (*Sallé*); BRITISH HONDURAS, R Hondo, Belize (*Blancaneaux*); GUATEMALA, Chiacam, Tamahu, Zapote (*Champion*).

Very close to *D. thoracicus*; in the male the thorax is widest in front a very little below the angles (in *D. thoracicus* the widest part is below the middle); the legs are not nearly so long, and the hairs on the tarsi in the male are black; the antennæ are shorter, especially the third to the fifth joints; the elytra are less distinctly punctured, and have their apices acuminate and rounded. The legs and underside vary in the degree of depth of pitchy-red colour.

I have described this species from specimens from British Honduras, where it appears to be very abundant. The specimens from Mexico pertain, I believe, to the same species, and are very difficult to separate from *D. teredilis*, with which it was found by Herr Höge.

16. **Dasydactylus picipes.**

Niger, subænescens, nitidus, subtus cum pedibus piceus; capite prothoraceque parcius sat fortiter punctatis; elytris distincte punctato-striatis, interstitiis punctulatis; prosterno leviter exciso, apice bimucronato. Long. 8–10 millim. ♂ ♀.

Mas prothorace convexiore, lateribus medio rotundatis; pedibus anticis longioribus, femoribus intus subasperatis, tarsis nigro-hirtulis.

Hab. GUATEMALA, Cerro Zunil, Dueñas (*Champion*).

Smaller than *D. nitidus*, and, in addition to the prosternum being channelled and excised at the apex, differing from it as follows:—The thorax is shorter, and in the male widened in the middle rather than near the base (which is accordingly more constricted), and covered with more distinct but more scattered punctures; the interstices of the elytra are less thickly and less serially punctured, the striæ themselves being more strongly punctate. Many specimens were captured at Cerro Zunil by Mr. Champion, and what appears to be the same species occurred in some numbers at Dueñas.

17. **Dasydactylus teredilis.**

Nigro-piceus, nitidus, corpore subtus pedibusque dilutius piceis plus minusve infuscatis; antennis tarsisque nigris; capite prothoraceque parcius minute punctatis; elytris punctato-striatis, interstitiis sublævibus, apicibus acuminatis et minute denticulatis; prosterno exciso. Long. 6–7 millim. ♂.

Mas prothorace valde convexo; femoribus anticis asperatis, tarsis nigro-hirtulis.

Hab. MEXICO, Jalapa, Cordova, Teapa in Tabasco (*Höge*), Toxpam (*Sallé*); GUATEMALA, Capetillo, Chiacam (*Champion*).

One of the smaller species evidently composing a series very nearly allied and hard to separate. The males of *D. teredilis* have the thorax very wide and convex, the middle of the thorax being the widest part of the insect; the antennæ of moderate length, *i. e.* about as long as the head and thorax together, the third to the seventh joints subequal and longer than wide. The front legs are long, but the middle pair is shorter than in some species of the genus; and their femora appear to be smooth in the males.

18. **Dasydactylus cyanopterus.**

Sanguineo-rufus, elytris cæruleis; antennis pedibusque nigris, his basi rufis; abdominis apice nigrescente.
Long. 7–8 millim. ♂ ♀.

Mas prothorace magis convexo; tarsis anticis villosis, femoribus tibiisque asperatis.

Hab. Mexico, Toxpam (*Sallé*).

Very nearly resembling *Languria cyanipennis*, Crotch; similarly coloured, but more cylindrical, and with the thorax more coarctate behind. The head and thorax are very finely, rather closely, punctate, and often inclining to bluish; the elytra are more distinctly punctate than in *L. cyanipennis*, and have the interstices narrower and here and there irregularly punctured. The males will be easily recognized by the characters given. The apices of the elytra are very faintly denticulate (so as hardly to be thus termed); yet this character, which may be seen in some specimens of both *D. cyanopterus* and *D. sellatus*, is important as confirming their relationship with the other species of this genus. Four specimens.

19. **Dasydactylus sellatus.** (Tab. I. fig. 14, ♀.)

Languria sellata, Crotch, Cist. Ent. i. p. 385 [1].

"*L. angustatæ* proxima, sed capite, pedibus antennisque rufis, his clava infuscata; elytris cyaneis, fascia rufa pone medium. Long. $3\frac{1}{2}$–4 lin."

Hab. Mexico [1], Teapa (*Höge*, *Sallé*), Tuxtla, Playa Vicente (*Sallé*), Cordova (*Höge*); British Honduras, R. Hondo (*Blancaneaux*).

Var. Capite nigro.

Hab. Mexico, Teapa (*Höge*).

Bright ferruginous-red; the tarsi black, the claw-joint and claw reddish; the basal third and tip of the elytra steel-blue; the tip of the abdomen black; the apical and greater part of the preceding ventral segments also black. In several examples the femora, tibiæ, tarsi, and antennæ are indistinctly clouded with bluish-fuscous. The elytra are subulate; their apices almost pointed and faintly serrate, but not denticulate; distinctly punctate, the striæ so close as almost to be confused. The prosternal process is margined and greatly cut out at the tip. The male characters are similar to those of other species of *Dasydactylus*; but the hairs of the tarsi in both this and *D. cyanopterus*, to which it is nearly allied, are fine and silky; the femora and tibiæ of the front and middle legs are distinctly roughened.

One specimen, apparently not otherwise different, but with the head black, was captured by Herr Höge at Teapa.

20. **Dasydactylus ventralis.** (Tab. I. fig. 11, ♂.)

Languria ventralis, Chevr. Col. Mex. Cent. i. fasc. 4, no. 98 (1834) [1] (nec *Langurites ventralis*, Crotch, Cist. Ent. i. p. 392).

Nigro-piceus, viridi-æneus, nitidus, subtus rufo-piceus; capite prothoraceque crebre minute punctatis, nitidis-

simis; elytris creberrime punctatis, substriatis, apicibus lævibus, rotundatis et minute denticulatis; prosterno apice exciso, maris asperulo et sub-bimucronato. Long. 6–10 millim. ♂ ♀.

Mas prothorace convexiore; pedibus anticis et intermediis longis, femoribus intus asperatis, tarsis hirtulis.

Hab. MEXICO, Orizaba [1], Toxpam, Cordova (*Sallé*).

The *Langurites ventralis* of Crotch's 'Revision' is not this species, but merely a unicolorous specimen of *L. lineata*. Chevrolat's type is, however, contained in the Cambridge collection, and agrees with several specimens similarly named in Sallé's collection. It is a small species of a bluish-green iridescent hue, often inclining to pitchy. The prosternum is distinctly roughened on the sides, with small tubercles similar to those on the femora of the males; its apex is excised, but not deeply, and the angles are prominent, and in *D. ventralis* (and probably in other species) this appears to be especially the case in well-developed males. The elytra at the shoulders are distinctly wider than the base of the thorax.

21. **Dasydactylus (?) concinnus.** (Tab. I. fig. 12.)

Nigro-æneus, subviridis, pernitidus, angustus, corpore subtus pedibusque nigro-piceis; capite crebrius, prothorace parce minute, punctatis; elytris sat fortiter punctato-striatis, interstitiis punctulatis, apicibus acuminato-rotundatis et minute denticulatis; prosterno exciso. Long. $8\frac{1}{2}$–9 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Antennæ fuscous; the club rather elongate, though the separate joints are quite twice as wide as long (yet they are not so wide as in many species of this genus); the third to the sixth joints short, not much wider than long. The supraorbital striola is very short. The thorax is oblong, narrowed in front, widest at the base, the basal margin depressed in the middle and crenulate, the basal strigæ hardly distinct. The elytra are a little wider than the thorax at their base, tapering very evenly to their extremity. *D. concinnus* has very much the appearance of a species of *Trapezidera*, as represented by *T. ænea*; and as the three specimens (which are all I have found among a large number of 'Languriides' from the Volcan de Chiriqui) appear to be all females it is of course not unlikely that the species will have to be removed from this genus. It is apparently not a *Teretilanguria*; and the prosternum being excised it is better placed here than in any genus at present characterized. *D. concinnus* is an extremely neat and narrow insect.

NOMOTUS.

Pedes antici haud longi; femora valida, parum clavata; tarsi modice lati, subtus albo-hirtuli, haud longe ciliati. Antennarum clava quadri-articulata, articulo septimo intus perparum acuminato. Prothorax oblongo-quadratus, utroque sexu convexus. Elytrorum apicibus rotundatis, perobsolete denticulatis, angulo suturali denticulo minuto. Prosternum excisum, utrinque foveolatum, apice sub-bimucronato.

The species forming this genus are practically *Languriæ* which have the apex of the elytra minutely denticulate. But as the genus *Languria* has not yet been accurately defined, it will be better here to compare the typical species, *Nomotus plutonus*, with

those of the other genera to which it bears any resemblance. From any species of *Dasydactylus*, the absence of long hairs from the front tarsi, the thickened femora, shorter legs, and more cylindrical form will sufficiently distinguish it; the claw-joint of the tarsi is also shorter. The antennæ are rather longer than is the case with middle-sized species of *Dasydactylus*; the club, though large and rather heavy, is not distinctly 5-jointed (the seventh joint is so little produced on its inner side as scarcely to appear widened, and does not really form part of the club); and there is no trace of any roughening of the femora. From *Languria* proper, such as *L. læta*, the denticulation of the apex of the elytra is perhaps sufficient.

1. **Nomotus plutonus.** (Tab. I. fig. 16.)

Niger, nitidus, subcylindricus; capite prothoraceque minutissime perobsolete punctatis, subglabris, hoc oblongo, convexo, lateribus paullulum rotundatis; elytris punctato-striatis, interstitiis fere lævibus, apicibus rotundatis et minute denticulatis, stria suturali ad apicem fortius impressa. Long. 9–10 millim.

Hab. PANAMA, Bugaba (*Champion*).

The colour of this species is wholly black above and beneath. The head and thorax are very smooth and shining; the latter rather convex, its sides rounded, widest about the middle, the base with a strong transverse depression, the basal striolæ short but distinct, the space between the latter almost smooth and with only a very few obsolete punctures. Scutellum orbicular, a little pointed behind. Elytra punctate-striate, the interstices nearly smooth; the sutural stria distinctly impressed as it approaches the apex, but the depression not so deep as in the following species. The femora in what I take to be the males of this species are very robust and distinctly clavate, especially the front pair; the tarsi also appear to be wider than those of the female, but the difference is not so great as to render it absolutely certain that I can separate the sexes.

Many specimens of this insect were secured by Mr. Champion at Bugaba.

2. **Nomotus ænescens.**

Nigro-subæneus, nitidus, subcylindricus; capite prothoraceque crebrius minute et obsolete punctatis; elytris punctato-striatis, interstitiis minute punctulatis, stria suturali fortius impressa et sutura ad apicem depressa; pedibus picescentibus. Long. 10–11 millim.

Hab. MEXICO, Cordova, Jalapa, Tapachula in Chiapas (*Höge*); GUATEMALA, Zapote, San Gerónimo (*Champion*).

Very close to *N. plutonus*, but rather larger, and with a brassy reflection which is not present in that species. The whole insect is proportionally rather longer, the sutural stria is more distinctly impressed, and the depression of the suture at the apex is deeper. Other points of difference are the punctate interstices; the finer punctures of the striæ; and the thicker and more distinct punctuation of the thorax, especially at the base, where the basal depression is usually covered with deep and coarse punctures and sometimes even foveolate.

3. **Nomotus capetillensis.**

Nigro-æneus, nitidus, subcylindricus; capite prothoraceque crebre distinctius punctatis; elytris punctato-striatis, stria suturali fortius impressa; pedibus nigris, basi et tibiis interdum picescentibus. Long. 8–9 millim.

Hab. British Honduras, R. Hondo (*Blancaneaux*); Guatemala, Cerro Zunil, Capetillo, Chacoj (*Champion*).

A species differing from *N. œnescens* by its smaller size, rather more parallel form, and the more distinct and rather sparser puncturing of the thorax. The series of specimens from Capetillo all agree very closely in these characters, and with them I unite a single example from the R. Hondo; this latter is rather narrower and quite black, and may prove to belong to a distinct species.

ORTHOLANGURIA.

Ortholanguria, Crotch, Cistula Ent. i. p. 395 (1876)[1].

In addition to the characters given [1] I add the following:—Tarsi clothed with short thick hairs on the soles; antennæ set in deeply margined sockets, there being a space between the eye and socket; the epistoma ill-defined by a depression; the ocular canthus bordered above by a straight, smooth, ridge, the striola short and not deep; scutellum transverse, punctured (*O. concolor*) or only impressed (*O. batesi*); prosternum broad, margined, truncate, but little excised, and much depressed at its apex; mesosternum coarsely punctured; ventral apical plate of the abdomen rather broadly rounded, faintly emarginate, not distinctly punctate, nor very pubescent (*O. batesi*).

The species we record from Mexico is much smaller than, but otherwise very similar in build to, *O. concolor*; the two described by Crotch (*O. batesi* and *O. concolor*) are both from Tropical South America.

1. **Ortholanguria elongata.** (Tab. I. fig. 23.)

Picea, subtus rufo-picea, antennis pedibusque fere nigris; capite crebrius, prothorace parcius et minute, mesosterno fortiter, punctatis; elytris nigro subcæruleis, fortiter punctato-striatis. Long. 9 millim.

Hab. Mexico, Jalapa (*Höge*), Toxpam, Juquila (*Sallé*).

Head with the eyes not wider than the thorax, pitchy. Antennæ with the seventh joint small but triangular; the eighth, ninth, and tenth joints strongly transverse, being more produced on their inner sides than on the outer, the eleventh joint subquadrate but not so wide as the tenth, the whole club consequently short and round. Thorax longer than wide; pitchy, the disc darker and faintly bluish; the base margined, and with coarser punctures; and with very slight traces of a basal striga. Elytra with the tips round, a little acuminate, and obsoletely denticulate. Femora rather stout and a little sinuate. Underside of the body, the coxæ, and trochanters pitchy-red. Five specimens.

Obs. The apical ventral segment in this species is not at all emarginate; but this character in *O. batesi* is very slight, and perhaps indicates a sexual difference only.

2. **Ortholanguria extensa.**

Parallela, nigra; capite prothoraceque fere glabris, hoc sesqui longiore quam latus, subcærulescente, basi in medio depresso et tenuiter marginato; elytris subæneo-picescentibus, obsolete punctato-striatis, apicibus latiusculis, parum expansis et minute denticulatis; pedibus nigris; tarsis tenuibus, longis. Long. $11\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Differs from *O. elongata* by the rather more prominent eyes, and the nearly smooth head and thorax, the only punctures on the head being a few on the depression marking the epistoma and a very few minute ones behind the eyes. The thorax is quite free from punctures, but has a transverse basal impression terminated by a punctiform indication of the striola. The elytra are faintly brassy, especially at the shoulders; the sutural stria is rather well marked; their apex accords more with the type of the genus than does that of *O. elongata*. The apex of the ventral segment is broad and emarginate, though very indistinctly so. A single specimen.

LANGURITES.

Langurites, Motschulsky, in Schrenck's Reisen und Forsch. Amurl-Lande, ii. p. 243 (1860); Crotch, Cistula Ent. i. p. 392 (1876).

This is one of the most distinct genera among the "Languriides." The parallel oblong thorax, the prosternal process smooth and almost horizontal, widened behind the coxæ and with its apex nearly straight, the elytra cut out obliquely at their apices (recalling *Pentelanguria*), and the elongate, loosely-articulated club of the antennæ, render its recognition easy. *Languria ventralis*, Chevr., has nothing in common with the type of this genus, but will be found under *Dasydactylus*. The typical species appears to be found as far south as Venezuela.

1. **Langurites lineata.** (*L. linearis*, Tab. I. figg. 20, ♀; 20 *a*, ♂, ventral apex; 21, 22, ♂ vars.)

Languria lineata, Casteln. Ann. Soc. Ent. Fr. 1832, p. 412 [1].
Languria scapularis, Chevr. Col. Mex. Cent. i. fasc. 3, no. 97 (1834) [2].
Langurites vitticollis, Motsch. in Schrenck's Reisen und Forsch. Amur-Lande, ii. p. 243 (1860) [3].
Langurites vittatus, Motsch. loc. cit. p. 243 [4].
Langurites infuscatus, Motsch. loc. cit. p. 243 [5].
Langurites lineata, Crotch, Cist. Ent. i. p. 392 [6].
Langurites ventralis, Crotch, loc. cit. p. 392 (nec Chevr.).

Hab. MEXICO [6], Cordova, Juquila, Playa Vicente, Vera Cruz [2], Santecomapan (*Sallé*), Jalapa, Cordova (*Höge*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, Zapote, San Gerónimo, Chiacam, Teleman, San Joaquin, Panima in Vera Paz (*Champion*); NICARAGUA [4], Chontales (*Belt*); COSTA RICA, Cache, Irazu (*Rogers*); PANAMA, Volcan de Chiriqui (*Champion*); CENTRAL AMERICA [5 6].—SOUTH AMERICA, Colombia [1 6], Venezuela [3 6].

A widely distributed and variable species, of which we may distinguish five varieties :—

α. Greenish-black, the underside, head, thorax (excepting a broadish vitta and the lateral margins), and a more or less extended stripe from the base of elytra, ferruginous-red. [*L. scapularis*, Chevr.]

β. Like α, but with the head vittate also.

γ. Head and thorax (the lateral margins excepted), the underside, and the base of the legs, red, the elytra wholly black.

δ. Brownish-red, the thoracic vitta and margins, and the tip of the elytra blackish, the antennæ black.

ε. Almost entirely black, and broader than the preceding forms. [*Langurites ventralis*, Crotch, *nec* Chevr.]

In the synonymy I have followed Crotch; the various varieties look as if more species might be detected among them; var. ε, especially, looks distinct.

The sexual characters have not hitherto been noticed. In the male the apical ventral segment is very coarsely punctate and hairy, and has a roundish excision; the front tarsi are very little dilated and not very hairy; the front femora are rather more incrassate in the male sex, all the femora being somewhat clavate in both sexes.

This is one of the best known of the American Languriides, it being contained in all collections of this group. It appears at first sight very improbable that the very narrow forms are conspecific with the broad form of var. ε; but varieties occur quite intermediate, and of all kinds of differences in colouring.

CROTCHIA.

Crotchia, Fowler, Trans. Ent. Soc. Lond. 1886, p. 305.

This genus has been described at great length by Mr. Fowler; this author including in it six species from Colombia and Brazil. These species are very nearly allied to some of those now described from Central America; the eyes, however, are often larger, and the tarsi of the males more hairy and wider. The characters now given are identical, but condensed, and rendered comparative with the generic diagnoses of this family in the present work:—Body convex and gibbous, constricted at the junction of the thorax and elytra. Head with margined sockets for the antennæ; the ocular canthus margined by a straight raised line above, but there is scarcely any striola; epistoma imperfectly divided by a vague depression; crown with a double stridulating file. Eyes very prominent, large, and coarsely granulate. Antennæ with a three-jointed club. Prosternal process rather broad and truncate, the centre impressed, and the margin thickened on each side. Mesosternum deeply excised behind. Legs short and very stout; front tibiæ angular externally, being compressed but cut out on their outer side immediately above the tarsi; tarsi, especially the front pair of the males, wide and very

hairy beneath. Elytra very smooth, the striæ fine and the punctures minute; the suture a little depressed at the apex; their apices simple as in *Languria* proper, and passing the end of the abdomen. Ventral apical segment simple, and with scattered punctures. Abdominal lines present, short, very fine, divaricating. Second, third, and fourth segments of the abdomen with a punctiform tubercle on each side giving rise to an upright seta.

The three-jointed club and coarsely granulated eyes alone indicate that this is a very distinct genus from any other New-World form of the "Languriides." The typical species are of medium size, but others are small and more filiform; while the smallest members of the whole group which I have yet seen (these being scarcely two millimetres in length) find their location here. The six species described by Mr. Fowler are all from the late Mr. Crotch's or my own collection, and are all from Tropical South America. There is good ground for believing that this will prove one of the most numerous in species of the genera of the subfamily.

1. **Crotchia proxima.** (Tab. I. figg. 24 *, 24 *a*, ♂; 24 *b*, ♂ front tarsus; 24 *c*, ♀ front tarsus.)

C. vagabundæ (Fowler) summa affinitate et primo visu haud differens, angulis autem prothoracis magis callosis parum reflexis; nigro-ænea, nitidissima; capite parce sat profunde, prothorace minute, punctatis, hoc quadrato, basi sinuato, subtiliter marginato, angulis anticis subrectis, angulis posticis acutiusculis, lateribus fere rectis marginatis; elytris quam prothorax parum latioribus, minute punctato-striatis, interstitiis planis et lævibus. Long. $8\frac{1}{2}$ millim.

Mas tarsis anticis latis, longius villosis; abdominis segmentis tribus intermediis puncto duplici setigero instructis.

Femina tarsorum anticorum articulo basali multo minore, minus villoso.

Hab. Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).

Although this species is so very close to the one from Brazil lately described by Mr. Fowler from two specimens in my own and Mr. Crotch's collections, yet a close comparison of the type with a long series of examples brought by Mr. Champion from the State of Panama convinces me that our insect must be regarded as distinct. *C. proxima* is rather larger; the thorax is quadrate, its disc more finely, scarcely visibly, punctate, and the anterior angles are a little more clearly reflexed so that they appear more prominent.

The species of this genus seem only to be differentiated by very minute distinctions, as, indeed, is the case in all the genera of "Languriides." I have not seen any specimens in our series of *C. proxima* that could be referred to *C. vagabunda*; though had these insects both occurred in the same country they might have been treated as mere varieties. According to this view *C. punctata*, described by Mr. Fowler as a variety, and other varieties spoken of by him, would be regarded as distinct species.

* By an oversight this figure is numbered 25 on the Plate.

2. Crotchia angustula.

Angustata, ænea, nitida; capite et prothorace minute parcius punctatis, hoc quadrato, angulis anticis subcallosis et parum prominulis vel reflexis; elytris fortius punctato-striatis; antennis pedibusque nigris, illis basi piceis. Long. 6–7 millim. ♂ ♀.

Mas tarsis anticis latis, villosis; abdominis segmentis tribus intermediis puncto duplici setigero munitis.

Femina tarsis anticis articulo basali parvo.

Hab. Panama, Bugaba (*Champion*).

With the same general structure as *C. proxima* this species differs from it in being much smaller and narrower; and in the striæ of the elytra having fewer, but much deeper and larger, punctures. The tarsi also differ more in the sexes. The antennæ are more or less picescent, excepting the club. The body beneath in both this and the preceding species is wholly black and shining, the apical ventral segment alone being somewhat pubescent; the ventral segments are vaguely impressed on the sides, but the setigerous spot in the males is placed a little on each side of the middle. About a dozen examples were secured by Mr. Champion.

3. Crotchia veræpacis.

C. parallelæ (Fowler) affinis; elongata, angusta, picea, nitida; capite prothoraceque parcius sat distincte punctatis, hoc quadrato, basi leviter sinuato; elytris fortius punctato-striatis; metasterno punctato; antennis clava nigra. Long. 5 millim. ♀.

Hab. Guatemala, El Jicaro in Vera Paz (*Champion*).

This insect is so very nearly allied to a species in my collection, from the Amazons, described by Mr. Fowler as *C. parallela*, that I have some hesitation in treating it as distinct. Unfortunately there is only a single female specimen; but having cleaned and carefully compared the types of both, I am able to state that *C. veræpacis* differs in having the metasternum distinctly and sparingly punctate, the head and thorax rather less thickly punctured, and the elytra have the punctures larger. I do not at present detect any other points by which I can distinguish *C. veræpacis* from the female of *C. parallela*. It is about the size of a small *C. angustula*, but is even narrower and more parallel than that species.

4. Crotchia curvipes.

Picea vel nigro-ænea, nitida; capite parcius sat fortiter, prothorace parce subtiliter, punctatis, hoc subquadrato; elytris leviter punctato-striatis; antennis rufo-piceis, clava nigra. Long. 6 millim. ♂ ♀.

Mas abdominis segmentis intermediis puncto duplici setigero munitis; tibiis intermediis curvatis.

Hab. Panama, Bugaba (*Champion*).

The male characters of this species will distinguish it at once from *C. hondurana*; it is also larger than that insect, which it otherwise resembles in the punctuation. The front angles of the thorax are a little more decidedly callous and turned outwards; the base of the thorax has a few large scattered punctures in the depressed portion, the punctiform basal sulcus deep and evident; and the legs are more robust and more evidently punctured.

5. **Crotchia hondurana.**

Picea, nitida; capite parce sat fortiter, prothorace crebre minute, punctatis, hoc quadrato et parum transverso; elytris leviter punctato-striatis; antennarum clava nigra. Long. 4½–5 millim. ♂ ♀.

Mas tibiis anticis apicibus leviter curvatis; abdominis segmentis intermediis puncto duplici setigero juxta marginem apicalem sito munitis.

Hab. MEXICO, near the city (*Flohr*), Cerro de Plumas (*Höge*); BRITISH HONDURAS, R. Hondo, R. Sarstoon (*Blancaneaux*); GUATEMALA, Cahabon, Panzos, Chacoj, and San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

A little species, to be known by its pitchy-rufous colour; distinctly punctured head; rather short, convex, and finely and closely punctured thorax; and elytra with fine punctured striæ, the interstices not visibly punctured. The tarsi do not exhibit the usual difference in dilatation in the male, and are not distinctly hairy; the front tibiæ are suddenly inflexed close to their apex. Some specimens, viz. those from Cahabon, have the elytra almost as smooth as those of *C. polita*.

6. **Crotchia picea.**

C. honduranæ summa affinitate, tibiis autem anticis maris apicibus haud incurvatis; prothoracis angulis anticis callosis, prominentioribus, mox distinguenda. Picea, nitida; prothorace transverso-subquadrato, parcius minute, capite fortius, punctato; elytris punctato-striatis. Long. 5 millim. ♂ ♀.

Mas abdominis segmentis intermediis puncto duplici setigero, versus marginem apicalem sito, munitis.

Hab. ? NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

Very close to *C. hondurana*; in three or four males, however, which I have examined the tibiæ are not inflexed just before the apex as they are in that species, and together with this the front angles of the thorax are more prominent, turning outwards in the *Cryptophagus* manner (in *C. hondurana* they are deflexed, and hardly visible when viewed from above). The specimen from Chontales is a female which appears to belong to this species, but cannot by itself be certainly indentified.

7. **Crotchia polita.**

Picea vel nigro-picea, nitida; capite distincte, prothorace obsolete, crebre, minute, punctatis, hoc quadrato vix transverso; elytris obsolete punctato-striatis (feminæ fere glabris); antennis rufis, clava nigra. Long. 5½–6 millim. ♂ ♀.

Mas abdominis segmentis intermediis puncto duplici setigero munitis; striis elytrorum fortius punctatis.

Hab. PANAMA, Volcan de Chiriqui below 4000 feet (*Champion*).

Very close to *C. hondurana*; rather larger, the females rather wider, and with the elytra smooth (the exceedingly fine striæ only to be perceived with a strong lens); and the club of the antennæ, *i. e.* the last three joints, alone black. The males of this species may be distinguished from those of *C. hondurana* by their front tibiæ being quite straight, and the elytra also wider and more acuminate towards the apex and smoother.

8. **Crotchia pusilla.**

Nigro-picea, nitida; capite parce punctato; prothorace parum transverso, lævi; elytris obsolete seriatim punctatis. Long. $2\frac{3}{4}$–3 millim. ♂ ♀.

Mas abdominis segmentis intermediis puncto duplici setigero, ægre distincto, munitis.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

This little species, one of the smallest of the whole group yet known, is very like a small *C. hondurana*, but the punctuation is different. On the head a very few scattered punctures are to be found, but these are, for the size of the insect, comparatively coarse; while the thorax, even under the microscope, is hardly visibly punctured. The antennæ are red, but darker towards the apex, the last four or five joints being black.

It was only with considerable trouble, and in a good light, that I was able to discern the seta on the abdomen of the male specimen.

9. **Crotchia parvula.**

Cylindrica, subparallela, ferruginea; capite prothoraceque crebre minute punctatis; elytris punctato-striatis; antennarum clava nigra. Long. $2\frac{1}{2}$–3 millim. ♂ ♀.

Mas abdominis segmentis intermediis puncto setigero, juxta apicem utrinque munitis.

Hab. BRITISH HONDURAS, R. Hondo (*Blancaneaux*); GUATEMALA, El Reposo, Zapote (*Champion*).

With the exception of *Microlanguria jansoni*, Crotch, which this insect very closely resembles, this is the smallest species of Languriides yet described; and from any but that species its very small size and yellow colour very readily distinguish it. The presence of setæ on the three abdominal segments in one of the examples, viz. that from British Honduras, proves the affinity that exists with the larger members of this genus. Whether the insect from Japan, and which also apparently exists in Ceylon, possesses also this curious sexual character I do not know; the structure of the antennæ is, however, different. In our species the antennæ have two large subequal basal joints, followed by a much thinner but equally long third joint; the fourth to the seventh joints being a little longer than broad, and the eighth is transverse. In the Japanese insect all the joints of the funiculus, including the eighth, are longer than broad, and the terminal three or club-joints are subquadrate; while in our species the first two joints of the club are transverse; other minute differences exist, which render it unnecessary here to notice the Eastern species further than to call attention to the remarkable parallelism that exists between forms probably generically different.

Four specimens, two from Zapote and one from each of the other localities, are all that have yet been found.

Obs.—M. Edw. Fleutiaux has [Annales de la Soc. Ent. de France, 1887, p. 68] described a species from Hué, Annam, under the name of "*Croachia minuta*" (sic). M. Fleutiaux does not compare his insect with *Microlanguria jansoni*, nor has he observed the sexual characters; I cannot therefore regard it as belonging to the genus *Crotchia*.

Subfam. *DACNIDES.*

This subfamily together with the Encaustides (which are not represented in the New World) and the Triplacides form Lacordaire's first tribe "Erotylini engidiformes." In this volume I adopt the secondary divisions alone as subfamilies without entering into the question of a general classification, for which more mature study and the comparison of the characters of a large number of genera (many of quite recent introduction) would be needed. The first of this tribe—the Encaustides—are characterized by having the inner lobe of the maxillæ armed with one hook or "spine" at the tip; it comprises species which are all of large size, and is confined to the eastern tropical or subtropical regions. The Triplacides agree with the Dacnides in having the inner lobe of the maxillæ unarmed; but are separated from them very concisely by the shape of the apical joint of the maxillary palpi, this joint in the Dacnides being conical or oval, or at most feebly securiform, while in the Triplacides it is enormously widened, the width being often greater than the whole length of the maxilla.

In our region the subfamily Dacnides is represented by the genus *Megalodacne* alone. The small species of the genus *Dacne* are found in the temperate zones both north and south, predominating greatly in the former. *Episcapha*, *Triplatoma*, *Coptengis*, and some other genera are, like the Encaustides, eastern-tropical species; while some genera which have been associated with them by Chapuis in his "Group I. Engidites" are inhabitants of such distant regions as Australia and the island of Madeira. It will be observed, however, that Chapuis includes in the group genera with feet "pentamerous" and "subpentamerous" (the character upon which Lacordaire separated his equivalent divisions); and adopts a new character, viz. the relative length of the basal joint of the maxillary palpi, for the separation of the Triplacides.

For a true classification it is evident we shall have to rely on more general considerations than these, to which we are forced to admit many exceptions.

MEGALODACNE.

Megalodacne, Crotch, Cist. Ent. i. p. 141 (1873), and p. 415 (1876); Trans. Am. Ent. Soc. 1873, p. 352.

Dacne, Lacordaire, Monogr. Erotyl. p. 63 (1842).

This genus has representatives both in the New and Old Worlds, being, however, in both nearly confined to the tropics. In North America and in Japan one or two species extend as far north as lat. 40°.

The close resemblance of species from such distant localities as South America and the west coast of Africa is a very remarkable fact.

1. **Megalodacne quadriguttata.** (Tab. II. fig. 1.)

Erotylus 4-*guttatus*, Oliv. Enc. Méth. vi. p. 434 (1791)[1].
Triplax 4-*guttata*, Oliv. Ent. v. p. 489, t. 1. f. 2.
Episcapha heros, Guérin, Rev. Zool. 1841, p. 159[2].
Engis signata, Casteln. Hist. Nat. Col. ii. p. 15[3].
Episcapha quadrisignata, Dej. Cat. 3rd ed. p. 137[4].
Dacne quadriguttata, Lac. Monogr. Erotyl. p. 70[5].
Dacne multifida, Lac. Monogr. Erotyl. p. 72, var.[6]
Dacne brasiliensis, Lac. Monogr. Erotyl. p. 72, var.[7]
Megalodacne quadriguttata, Crotch, Cist. Ent. i. pp. 141, 417[8].

Hab. NICARAGUA, Chontales (*Belt*, *Janson*[8]).—GUIANA, Cayenne[1 3 4 5]; BOLIVIA[2]; BRAZIL[6 7].

Olivier's figures of the Erotylidæ, including the present species, are very rude, and do not give much idea of the insect.

2. **Megalodacne audouini.** (Tab. II. fig. 2.)

Dacne Audouini, Lac. Monogr. Erotyl. p. 66[1].

Hab. MEXICO[1], Presidio (*Forrer*), Cordova (*Höge*), Toxpam, Paso del Macho (*Sallé*).

Distinguished from *M. fasciata*, which it very closely resembles, by its rather more elongate and parallel form, by the distinctly punctured striæ of the elytra, by the humeral black spot not being surrounded by red, and (according to Lacordaire) by the apical joint of the labial and maxillary palpi being dilated and securiform. Höge brought a fine series of specimens from Cordova. The single example from Presidio is more narrowed in front and behind than usual, but is not, I believe, specifically distinct.

3. **Megalodacne fasciata.**

Ips fasciata, Fabr. Gen. Ins. p. 213 (1777)[1]; Ent. Syst. ii. p. 511.
Dacne fasciata, Lac. Monogr. Erotyl. p. 65[2].
Megalodacne fasciata, Crotch, Trans. Am. Ent. Soc. 1873, p. 353[3].
Erotylus bifasciatus, Oliv. Enc. Méth. vi. p. 433 (1791)[4]; Cand. Mém. Liége, xvi. p. 393, t. 6. f. 6.

Hab. NORTH AMERICA[1 2], Middle and Southern States[3].—MEXICO[4], Cordova (*Höge*).

Common in the Middle and Southern United States, apparently much less so further south. There is only one specimen in the collection sent by Höge.

4. **Megalodacne tortuosa.**

Dacne tortuosa, Lac. Monogr. Erotyl. p. 69[1].

Hab. MEXICO, Eastern States[1].—SOUTH AMERICA, Colombia[2].

Not in any of the collections received by us. The few specimens I have seen have been labelled Colombia.

Subfam. *TRIPLACIDES.*

PSELAPHACUS.

Pselaphacus, Percheron, Gen. Ins. fasc. 4, no. 6 (1835) ; Lacordaire, Monogr. Erotyl. p. 73 (1842) ; Crotch, Cist. Ent. i. p. 141 (1873).

A genus widely distributed in tropical South America, and fairly represented in Mexico and Central America, but not passing into the United States so far as is at present known.

1. **Pselaphacus conspersus.** (Tab. II. fig. 10.)

P. nigropunctato proxime affinis, niger, nitidus ; prothorace brevi, supra castaneo-rufo, margine antico, basi, limbo laterali, vitta mediana (postice abbreviata), maculis sex majoribus punctisque nonnullis, nigris ; elytris castaneo-rufis, basi, fascia irregulari (marginem haud attingente), epipleuris, macula versus apicem punctisque numerosis, nigris. Long. 18–20 millim.

Hab. PANAMA, Volcan de Chiriqui (*Trötsch*).

Very closely allied to *P. nigropunctatus*. The black markings of the thorax are very similar to those of *P. ducalis* ; the elytral markings are, however, different, the black punctures in *P. conspersus* being wholly irregular (in *P. ducalis* they are arranged in four series) and more numerous, and often confluent, and the fascia being more developed, with a posterior additional spot. Probably several of the species of this group will be ultimately treated as varieties of *P. nigropunctatus*. At present the Chiriqui insect could not be united with any of them, without the admission that these were themselves but varieties of one or more species.

2. **Pselaphacus pœcilosomus.** (Tab. II. fig. 4.)

Pselaphacus pœcilosomus, Lac. Monogr. Erotyl. p. 77 [1] ; Crotch, Cist. Ent. i. p. 419 [2].
Pselaphacus hopei, Guérin, Icon. Règne Anim., Ins. p. 309 [3].

Hab. PANAMA, Volcan de Chiriqui (*Champion*).—COLOMBIA [1 2 3], Bogota ; ECUADOR [2].

The specimen figured is from the Volcan de Chiriqui.

3. **Pselaphacus curvipes.** (Tab. II. figg. 5, 6.)

Pselaphacus curvipes, Guérin, Rev. Zool. 1841, p. 157 [1] ; Lac. Monogr. Erotyl. p. 81 [2].
Pselaphacus gracilipes, Lac. Monogr. Erotyl. p. 82 [3].
Pselaphacus distortus, Crotch, Cist. Ent. i. p. 142, var.[4]

Hab. MEXICO [4], Toxpam (*Sallé*) ; NICARAGUA [4], Chontales (*Belt*, *Janson*) ; PANAMA, Bugaba, Volcan de Chiriqui, La Caldera (*Champion*).—SOUTH AMERICA, Bolivia [1 2], Amazons [3].

I am unable to recognize as distinct the species described by Crotch under the name *P. distortus*. Some specimens from Mexico and Nicaragua are intermediate in

the form and undulation of the yellow elytral fasciæ, and there is really no structural difference, or any of importance in the punctuation.

The brown variety with luteous fasciæ mentioned by Lacordaire is, I believe, only a less mature example of this species. Fig. 5 is taken from a specimen from Chontales, and fig. 6 from an example of the var. *P. distortus* from Toxpam.

4. **Pselaphacus nicaraguæ.** (Tab. II. fig. 3.)

Pselaphacus nicaraguæ, Crotch, Cist. Ent. i. p. 142 [1]; C. O. Waterh. Aid to the Ident. of Ins. part 9, t. 72.

Hab. NICARAGUA, Chontales (*Belt*, *Janson* [1]); PANAMA, Bugaba (*Champion*).

Not common. Mr. Champion met with two specimens at Bugaba, one of which is figured.

5. **Pselaphacus vitticollis.** (Tab. II. fig. 7.)

Pselaphacus vitticollis, Crotch, Cist. Ent. i. p. 142 [1].

"*P. dentato* affinis, thorace fulvo, margine tenui, vitta discoidali punctoque utrinque nigris; elytris basi nigra, annulo apicali incompleta. L. c. $5\frac{1}{2}$–6 lin."

Hab. NICARAGUA (*Sallé*), Chontales (*Janson* [1], *Belt*); PANAMA, Bugaba, La Caldera in Chiriqui (*Champion*).—SOUTH AMERICA, Colombia [1].

A species resembling *P. pœcilosomus* in the colour and markings of the thorax, but smaller and without the double row of punctures. The single specimen in the Sallé collection is very small, 10 millimetres only in length. Apparently but few examples have been sent.

6. **Pselaphacus puncticollis.** (Tab. II. fig. 8.)

Pselaphacus puncticollis, Guérin, Rev. Zool. 1841, p. 158 [1]; Lac. Monogr. Erotyl. p. 87 [2]; Chapuis, Gen. Col. Atlas, t. 131. f. 5; Crotch, Cist. Ent. i. p. 421 [3].

Hab. MEXICO, Toxpam (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, San Isidro (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, Volcan de Chiriqui, La Caldera (*Champion*).—GUIANA, Cayenne [2 3]; BRAZIL [1 2 3]; AMAZONS [3]; PERU.

One of the commonest species of the genus, and widely distributed. Our figure is taken from a specimen from Toxpam.

7. **Pselaphacus semiclathratus.** (Tab. II. fig. 9.)

Pselaphacus semiclathratus, Lac. Monogr. Erotyl. p. 88 [1].

Hab. MEXICO, Toxpam (*Sallé*), Yucatan [1]; BRITISH HONDURAS, Belize, R. Sarstoon (*Blancaneaux*); GUATEMALA, El Reposo (*Champion*).

A Toxpam specimen is figured.

8. **Pselaphacus signatus.**

Pselaphacus signatus, Guérin, Rev. Zool. 1841, p. 158[1]; Crotch, Cist. Ent. i. pp. 142, 421[2].
Pselaphacus signatipennis, Lac. Monogr. Erotyl. p. 84[3].
Episcapha signatipennis, Dej. Cat. 3rd edit. p. 137[4].

Hab. NICARAGUA, Chontales (*Belt, Janson* [2]); PANAMA, Bugaba, Volcan de Chiriqui, La Caldera (*Champion*).—COLOMBIA[2]; GUIANA, Cayenne [2 4]; ECUADOR[2]; BOLIVIA[2]; BRAZIL, Bahia [1 3]; AMAZONS[2].

This species varies a little in size, but not much in the markings. Lacordaire records two varieties, which, as he has observed, do not differ much from the "type," *i. e.* from the form which he selected for his diagnosis; there was no ground for the substitution of a mere catalogue name for one under which Guérin had sufficiently described another and equally typical form.

MEGISCHYRUS.

Megischyrus, Crotch, Cist. Ent. i. p. 143 (1873), and p. 422 (1876).
Ischyrus, Lacordaire, Monogr. Erotyl. p. 89 (1842) (pars).

This genus, proposed by Crotch, is equivalent to Lacordaire's first division of the old genus *Ischyrus*, if the only species in the Section B, viz. *I. tarsalis*, is excluded. The latter species Crotch refers to *Epytus*, an opinion I do not share, but which need not be discussed here, as neither species of *Epytus* occurs on the continent of North America. *Megischyrus*, therefore, is only characterized by the larger size of the species mainly composing it, and by the more elongate club of the antennæ. It is, however, convenient as a typical group of species, occurring only in Mexico and Central and South America. Crotch included twenty-six species in his list, and only three have been since described, these latter being from Bolivia and Peru

1. **Megischyrus mexicanus.** (Tab. II. fig. 11.)

Ischyrus mexicanus, Lac. Monogr. Erotyl. p. 93[1].
Megischyrus mexicanus, Crotch, Cist. Ent. i. p. 423[2].

Hab. MEXICO, Toxpam (*Sallé*), Orizaba [1 2], Yucatan [1], Tabasco [1].

2. **Megischyrus nicaraguæ.** (Tab. II. fig. 13.)

Megischyrus nicaraguæ, Crotch, Cist. Ent. i. p. 143[1].

"*M. mexicano* proximus, et forte varietas geographica; differt forma paullo convexiore brevioreque, elytris minus opacis, evidentius punctato-striatis, regione subapicali haud rufo-limbata. L. c. 8 lin."

Hab. NICARAGUA (*Sallé*), Chontales (*Belt, Janson* [1]).

The above is all Crotch has said about this species. In addition I may point out that the red colour of the elytra in all the specimens I have seen is less vivid, and that

the black fasciæ are more indented, often reduced to spots. The species of this genus are usually very little differentiated, and many of this section depend rather on colour and size than on any structural character; the absence of the red submarginal stripe near the apex seems quite constant.

We figure a specimen from Chontales.

3. **Megischyrus guatemalæ.** (Tab. II. fig. 12.)

Megischyrus guatemalæ, Crotch, Cist. Ent. i. p. 424[1].

"Ater, subnitidus, oblongus, capite thoraceque subtiliter punctulatis, elytris tenue punctato-striatis, fasciis 3 e maculis alternis conflatis sanguineis. L. c. $6\frac{1}{2}$–7 lin."

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala[1], El Reposo, Zapote (*Champion*).

Many specimens of this species were captured by Mr. Champion at Zapote, one of which is figured on our Plate.

4. **Megischyrus sanguinolentus.** (Tab. II. fig. 14.)

Ischyrus sanguinolentus, Lac. Monogr. Erotyl. p. 97[1].
Megischyrus sanguinolentus, Crotch, Cist. Ent. i. pp. 143, 424[2].

Hab. Mexico, Yucatan[1 2], Tabasco[1]; British Honduras, Belize (*Blancaneaux*); Nicaragua, Chontales (*Belt*, *Janson*[2]).

5. **Megischyrus zonalis.** (Tab. II. fig. 16.)

Ischyrus zonalis, Lac. Monogr. Erotyl. p. 102[1].
Megischyrus zonalis, Crotch, Cist. Ent. i. p. 425[2].

Hab. British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Zapote (*Champion*).—Bolivia[1 2]; Peru, Chanchamayo.

In Crotch's collection there are three examples of this species, one from that of Guérin, and two from that of the late Mr. E. Sheppard, with which our insect perfectly agrees. A single specimen in the same collection named "*M. sicarius*" (from Reiche's collection) does not appear to me to be different; it is to be observed, however, that the variety of *M. sicarius* mentioned by Crotch under the name *M. perizonatus* is not in the Cambridge collection.

The insects I record under the name *M. zonalis* agree very well with Lacordaire's description; they may be recognized from their allies (except *M. sicarius*) by the black discal patch of the elytra having a projection nearly reaching the base. Our examples have sometimes the yellow margin obliterated in the middle of the suture; and the colour of the margin is yellow, not blood-red as in *M. discipennis*.

The figure is taken from a specimen from Zapote.

6. **Megischyrus discipennis.** (Tab. II. fig. 15.)

Ischyrus discipennis, Lac. Monogr. Erotyl. p. 101[1].
Megischyrus discipennis, Crotch, Cist. Ent. i. pp. 143, 425[2].

Hab. Mexico[1 2], Toxpam, Santecomapan (*Sallé*); Nicaragua (*Sallé*), Chontales (*Belt, Janson*[2]); Panama, Volcan de Chiriqui, La Caldera (*Champion*).

This insect has apparently a range further north than *M. zonalis*. *M. discipennis* is, however, comparatively rare in Mexico. The specimen figured is a unique one from Toxpam; it is rather larger than usual and very brightly coloured.

ISCHYRUS.

Ischyrus, Lacordaire, Monogr. Erotyl. p. 89 (1842) (pars); Crotch, Cist. Ent. i. p. 144 (1873), and p. 426 (1876).

As restricted by Crotch this genus contains only small species with coarsely granulated eyes. About forty-five species are included in it by him, all from America.

1. **Ischyrus quadripunctatus.**

Erotylus 4-punctatus, Oliv. Enc. Méth. vi. p. 437 (1791)[1]; Ent. v. p. 484. t. 3. f. 37.
Ischyrus 4-punctatus, Lac. Monogr. Erotyl. p. 127[2]; Crotch, Trans. Am. Ent. Soc. 1873, p. 353[3]; Cist. Ent. i. p. 426[4].

Hab. North America, United States[1 2 3 4].—Guatemala (*coll. Gorham*).

The only specimen I have yet seen from Central America is one in my own collection. The supposed Mexican specimens alluded to by Crotch[3] are not this species but *I. graphicus*. It is, however, probable that it occurs in Mexico.

2. **Ischyrus frontalis.**

Ischyrus frontalis, Lac. Monogr. Erotyl. p. 127[1].
Ischyrus agnatus, Crotch, Cist. Ent. i. p. 426[2].

Hab. Mexico[1] (*Flohr*); Panama, La Caldera in Chiriqui (*Champion*).—South America, Colombia[2].

I cannot find any difference of importance between *I. frontalis* and *I. agnatus*, excepting that the latter is smaller; our specimens agree with *I. agnatus* in size.

3. **Ischyrus tripunctatus.**

Ischyrus tripunctatus, Crotch, Cist. Ent. i. p. 144[1].

Hab. Nicaragua, Chontales (*Janson*[1]).

4. **Ischyrus graphicus.** (Tab. II. fig. 17.)

Ischyrus graphicus, Lac. Monogr. Erotyl. p. 125[1]; Crotch, Cist. Ent. i. pp. 144, 426[2].

Hab. Mexico[1 2], Toxpam (*Sallé*); Nicaragua (*Sallé*), Chontales (*Belt, Janson*[2]).

At first sight very similar to *I. quadripunctatus*; and Crotch remarks, referring to the Nicaraguan specimens, "these as well as the Mexican exponents of this species appear to be a southern form of *I. quadripunctatus* with the head more or less rufous." It has, however, in addition to the colour of the head, the prosternum compressed in front, projecting in a point, and hence is placed by Lacordaire in a separate section of the genus. It appears to me to be scarcely distinct from *I. subcylindricus*, according to the exponents of that species in the Cambridge collection, and others in my own.

5. **Ischyrus vespertilio.**

Ischyrus vespertilio, Lac. Monogr. Erotyl. p. 112[1].

Hab. MEXICO, Tabasco [1].—SOUTH AMERICA, Colombia [1].

I have not seen this species.

6. **Ischyrus elegantulus.**

Ischyrus elegantulus, Lac. Monogr. Erotyl. p. 121[1]; Crotch, Cist. Ent. i. pp. 144, 426[2].

Hab. NICARAGUA, Chontales (*Janson* [2]).—SOUTH AMERICA, Colombia [1 2].

Not seen by me from Nicaragua; the specimens in the Cambridge collection are from Colombia.

7. **Ischyrus bogotæ.**

Ischyrus bogotæ, Crotch, Cist. Ent. i. p. 430[1].

Hab. GUATEMALA, Zapote (*Champion*).—COLOMBIA, Bogota [1].

8. **Ischyrus proximus.** (Tab. II. figg. 21, 22.)

Ischyrus proximus, Lac. Monogr. Erotyl. p. 113[1].

Hab. MEXICO [1], Toxpam, Santecomapan (*Sallé*); GUATEMALA, Zapote (*Champion*); NICARAGUA, Chontales (*Belt*); COSTA RICA, Cache, Irazu (*Rogers*).

In this apparently common species the thorax has six spots, the two discal ones alone being detached, the others placed two on the front margin and two on the base, together forming a circle. The head is red in the central part and in front, excepting in the Mexican specimens and in one from Chontales, where it is black. Our figure 21 is taken from a specimen from Santecomapan; fig. 22 is from an example from Irazu.

9. **Ischyrus femoralis.**

Dacne femoralis, Chevr. in Guérin's Icon. Règne Anim., Ins. p. 63, t. 18. f. 10[1].

Ischyrus femoralis, Lac. Monogr. Erotyl. p. 114[2]; Crotch, Cist. Ent. i. p. 430[3].

Hab. MEXICO [1 2 3].

This, as Crotch remarks, is probably only a colour-variety of *I. proximus*,

an opinion rendered more probable by the occurrence of the varieties noticed under that species; but the femora, tibiæ, and the basal two joints of the antennæ (as well as the head) are red, and the knees dark. I have only seen the specimen in the Cambridge collection.

10. **Ischyrus tetrastictus.** (Tab. III. fig. 1.)

Rufo-ferrugineus, minute parce punctatus, antennis pedibusque piceis; capite puncto singulo, prothorace punctis quatuor transverse dispositis nigris; elytris punctato-striatis, fasciis duabus communibus (una basali altera pone medium), macula apicali, sutura postice limboque tenuissime nigris. Long. 7 millim.

Hab. PANAMA, David (*Champion*).

Oblong, rather parallel, chestnut-red above, rusty-red beneath. Head and thorax sparsely and not deeply punctured; the former with one black spot on the crown; the latter with four spots, arranged as in *I. graphicus*. Elytra with a broad basal fascia deeply indented on the apical side at the suture and in the middle, and not reaching the margin; a second fascia beyond the middle, widest at the suture, twice indented on each side and not touching the margin; and an apical spot; the extreme limb of each elytron is black in the apical half. The legs are pitchy, with the knees darker, the tarsi reddish. The antennæ are pitchy-black, with the club black.

A single specimen.

11. **Ischyrus septemsignatus.** (Tab. II. fig. 19.)

Oblongo-ovatus, flavo-ferrugineus, parce sat fortiter punctatus; pectore abdomineque medio, capite, prothoracis punctis duobus, scutello, macula magna scutellari communi et tribus aliis (una humerali lineari, una mediana rotundata alteraque subapicali minore), sutura pedibusque nigris. Long. 6 millim.

Hab. MEXICO, Toxpam (*Sallé*).

Var. α. Capite rufo.

Hab. GUATEMALA, Capetillo, Pantaleon (*Champion*).

Var. β. Major, fortius punctatus, capite rufescente.

Hab. GUATEMALA, Capetillo (*Champion*).

Head, thorax, sides of the metasternum, and abdomen rather strongly and thickly punctured. Antennæ short, pitchy, with the club black. The elytra have their markings distinct; in some specimens the suture is scarcely touched with black; the punctured striæ are distinct, but the seventh and eighth are almost obliterated. In the markings and in the elytra being narrowed towards the apex, this insect recalls the Eastern *Episcapha australis*. The variation in the colour of the head is not unusual in this genus.

12. **Ischyrus scutellaris.** (Tab. III. fig. 2.)

Oblongo-ovatus, flavus, parce haud profunde punctatus; prothorace punctis duobus discoidalibus, duobus

parvulis in margine antica, limbo laterali, elytris macula magna communi tribusque aliis (una subhumerali, duabus paullo post medium transverse dispositis), et sutura nigris. Long. 6 millim.

Hab. PANAMA, Bugaba (*Champion*).

Very nearly allied to *I. septemsignatus*, but more obsoletely punctured and with the markings different. The head has no spot; the thorax has two small spots upon the front margin, and no basal marks of any kind. The two spots on the middle of the elytra do not represent the one spot in *I. septemsignatus*; they are placed further back. The suture is very narrowly black, and that colour vanishes before the apex. The underside and legs are pale, but possibly the unique specimen is not fully matured.

One specimen.

13. **Ischyrus undulatus.** (Tab. III. fig. 3.)

Oblongo-ovatus, flavo-ferrugineus, subtus subtiliter punctatus; ore, antennarum clava, prothoracis punctis quatuor (duobus anterioribus approximatis, duobus posterioribus magis distantibus), elytris macula magna scutellari communi, puncto humerali et subapicali fasciaque mediana, valde attenuata, marginem haud attingente, sutura pedibusque nigris. Long. 7 millim.

Hab. PANAMA, Bugaba (*Champion*).

Head red, finely and thickly punctured, the front edge blackish; antennæ pitchy, their third joint and the club black; thorax less densely and more deeply punctured than the head, the four spots arranged in a trapezium, the two front ones being nearest, and not touching the front margin. The punctured striæ of the elytra are very faintly impressed and obliterated at the sides and apex.

This and *I. nitidior*, Crotch, are the only species of *Ischyrus* at present known to me with the spots arranged on the thorax in this way. Allied to *I. nitidior*, Crotch, but larger and differently punctured. A single specimen.

14. **Ischyrus pictus.** (Tab. III. fig. 4.)

Oblongo-ovatus, crebre sat fortiter punctatus, flavus; vertice, antennis, prothoracis punctis duobus discoidalibus et tribus basalibus, scutello, elytris macula scutellari communi subquadrata, gutta oblonga juxta suturam pone medium, punctisque tribus (una humerali, una mediana prope marginem et una subapicali), sutura, limbo tenui pedibusque nigris; pectore picescente. Long. 6 millim.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

Rather broadly ovate and convex; the puncturing moderately strong, the striæ evanescent at the sides and apex of the elytra, but fine interstitial puncturing may be seen. The mouth and palpi are pitchy; the head is yellow above, but the base and the whole margin of the epistome are blackish. The thorax is about twice as wide as long, the sides not much rounded, narrowing in front; the three basal spots are connected along the base, the two outside ones being somewhat triangular. The tarsi are (as usual) pitchy-red. The markings of the elytra need not be re-enumerated, as the figure gives a very good representation of them. A single specimen.

15. **Ischyrus insolens.** (Tab. II. fig. 20.)

Ischyrus insolens, Crotch, Cist. Ent. i. p. 429[1].

Hab. Mexico[1], Toxpam (*Sallé*).

This is one of the largest of the true *Ischyri*, and will be recognized by a reference to our Plate, as the markings are peculiar. It has, so far as I know, only been met with by M. Sallé.

16. **Ischyrus ephippiatus.**

Oblongo-ovatus, subtus subtiliter, supra fortius parce punctatus; niger, capite prothoraceque rufis, hoc vitta lata et basi nigris, elytris rufis plagia late marginem haud attingente, sutura limboque tenui nigris; tarsis rufis. Long. $5\frac{1}{2}$ millim.

Hab. Panama, Bugaba, Caldera in Chiriqui (*Champion*).

Allied to *I. auriculatus*, Lac., from Cayenne, in the mode in which the thorax is marked with black; the head is rufous, impressed in front, almost coarsely punctured; the antennæ are black; the thorax is less thickly but strongly punctured. Elytra narrowing behind, punctate-striate; in addition to the markings mentioned in the diagnosis, the extreme limb is black; the suture is black throughout; the black discoidal patch is indented posteriorly at the suture (and looks as if it would divide into a single vitta on each elytron), and again indented between the fourth and fifth striæ, both in front and behind. A single specimen from each locality.

17. **Ischyrus chacojæ.** (Tab. III. fig. 5.)

Sanguineo-rufus, capite et corpore subtus nigrescentibus, sat fortiter punctatus; antennis, pedibus, pronoti punctis duobus, sutura fasciisque duabus extus abbreviatis (una basali juxta suturam latiore, altera pone medium), nigris. Long. $5\frac{1}{2}$ millim.

Hab. Guatemala, Chacoj in Vera Paz (*Champion*).

The head in this species is black, obscurely dark red in the middle; the thorax is dark blood-red, with two black dots placed rather near together in the middle, but nearer the front margin than to the base. The elytra are black at the base, but not externally to the callus, and more widely so to the third stria; the suture is black throughout; and there is an abbreviated fascia beyond the middle somewhat constricted near the suture; the striæ have large and deep punctures at the base, and they are also distinct beyond the middle, but the apex is nearly smooth. The legs are black, the claws and claw-joint red. A single specimen.

18. **Ischyrus quinquepunctatus.** (Tab. III. fig. 6.)

Niger, prothorace rufo, punctis duobus discoidalibus et tribus basalibus nigris; elytris sat fortiter punctato-striatis, fasciis duabus ad marginem latioribus et fere conjunctis tarsisque rufis. Long. 5 millim.

Hab. Panama, Bugaba (*Champion*).

Elongate; the head and antennæ black; the former sparsely but very distinctly punctured, the thorax less distinctly so, the extreme margin of the latter dark but hardly black, the five spots placed so as to indicate the angles of the letter M. The punctures of the elytral striæ are fuscous on the red fasciæ, so that the striæ appear distinct; they are (as usual) effaced towards the apex. The tarsi are entirely dark blood-red.

Although this species has the general appearance of so many of this genus it is hard to compare it with any other. The black head and the arrangement of the five thoracic spots are alone quite sufficient to distinguish it.

A single specimen.

19. **Ischyrus episcaphulinus.** (Tab. III. fig. 7.)

Oblongo-ovatus, convexus, postice angustatus, nigro-piceus, sat fortiter punctatus; prothorace piceo, punctis quatuor nigris, duobus discoidalibus, duobus basalibus; elytris saturate flavis, macula communi transversa subscutellari, puncto humerali, fascia lata mediana utrinque undulata punctoque subapicali nigris; antennis tarsisque rufo-piceis, illis clava nigra. Long. 7 millim.

Hab. GUATEMALA, Zapote (*Champion*).

This species and *I. chacojæ* are distinguished by the very convex oval form. The thorax is broad, narrowing slightly in front, the median lobe well pronounced and black, the punctuation close and strong, especially near the hind angles. The elytra are as wide at the base as the thorax, thence the margin widens a little, but is strongly narrowed to the apex; they are finely punctate-striate. The spots and markings of this species and of *I. undulatus* are similar, but *I. episcaphulinus* is of a wholly different form. The colour in the latter is obscure, and the black transverse mark near the scutellum does not touch the base; the central fascia is much wider, and is deeply indented between the fourth and fifth striæ in front, and less deeply so between the fifth and sixth striæ behind; the fascia does not reach the margin, and the latter is very narrowly black. The interstices of the elytral striæ are thickly but finely punctate, the punctures behind being equal to those in the striæ. The tarsi and claws are red.

A single specimen.

20. **Ischyrus puncticollis.**

Oblongus, niger; prothorace flavo, crebre distincte punctato, subtilissime alutaceo, punctis quatuor nigris transverse dispositis; elytris sordide flavis, maculis duabus subscutellaribus conjunctis, puncto humerali, fascia mediana undulata maculaque apicali obliqua nigris; abdominis segmentis singulis ad latera rufo-notatis. Long. 6 millim.

Hab. MEXICO, Paso del Norte in Chihuahua (*Höge*).

A species somewhat resembling *I. tetrastictus* in the disposition of its spots and markings, but quite distinct from it. The head is black, coarsely and rather sparingly punctured. The antennæ and palpi are pitchy-black. The thorax is small, with very

straight sides, much narrowed in front; the front and hind angles more acute than in *I. tetrastictus*; deeply and thickly punctured; the four black dots in a slightly arcuate line, the base black in the middle. The elytra are narrower than in *I. tetrastictus*; the humeral spot is separate; the striæ are fine and have the punctures packed very closely all along, but the punctures are very small (and owing to the comparative narrowness of the insect the striæ appear closer together than usual); the fascia reaches the margin.

I have seen but one specimen of this species.

21. **Ischyrus collatinus.**

Ischyrus collatinus, Crotch, Cist. Ent. i. p. 433[1].

"Fulvus, oblongus, subtus niger, prosterni lateribus rufis; capite rufo, vertice nigro; thorace crebrius punctatis, subtransverso, lateribus rotundatis, antice angustiore, linea transversali discoidali nigra (utrinque abbreviata) basique nigro marginato in medio; scutello nigro; elytris sublævibus, punctato-striatis, singulo maculis nigris 7—1 transversa paullo infra scutellum, 1 minima marginem versus, 1 transversa paullo ante medium, 1 minima marginem versus, 1 obliqua in tertia apicali, 1 subapicali, ad suturam conjuncta." Long. 7 millim.

Hab. NICARAGUA, Chontales (*Belt*, *Janson*).—SOUTH AMERICA, Colombia[1].

This is a peculiarly-coloured species, and it has the broad depressed form of many *Mycotreti*; the eyes, however, are coarsely faceted, and the prosternum is sharply compressed and carinate in front. Crotch mentions seven spots on each elytron; but from his description, which we give in full, it will be seen there are but six, which is the fact.

The body beneath and the legs in our specimens are pitchy, and the colour above is yellow rather than fulvous.

22. **Ischyrus distinguendus.** (Tab. II. fig. 23.)

Ischyrus distinguendus, Lac. Monogr. Erotyl. p. 111[1].

Hab. MEXICO[1], Toxpam (*Sallé*).

A fine species (10½ millim.), easily recognized by the tridentate basal mark on the thorax, and by the elytral markings, the large black patch behind the middle being somewhat heart-shaped. The colour appears to be either yellow or chestnut-red. There is one example in Crotch's collection, which was probably obtained by Chevrolat from M. Sallé.

CALLISCHYRUS.

Callischyrus, Crotch, Cist. Ent. i. p. 434 (1876).
Ischyrus, Lacordaire, Monogr. Erotyl. p. 89 (1842) (pars).

This genus was proposed by Crotch to include eight species, of which *Erotylus insignis*, Laporte, was the type. The eyes are more finely granulated than in *Ischyrus*

proper. The species are larger in size, though scarcely equal to the smaller forms of *Megischyrus*; and the colour is very different, being usually a beautiful blood-red, with bluish elytra banded with yellow.

The species all inhabit Central or South America.

1. **Callischyrus venustus.**

Ischyrus venustus, Lac. Monogr. Erotyl. p. 109[1].
Callischyrus venustus, Crotch, Cist. Ent. i. p. 434[2].

Hab. MEXICO, Yucatan[1 2].—SOUTH AMERICA, Colombia[1 2].

This species has not been met with by any of our collectors. Specimens labelled Yucatan are, however, not uncommon in collections.

2. **Callischyrus amœnus.** (Tab. II. fig. 25.)

Lybas amœnus, Guérin, Rev. Zool. 1841, p. 155[1].
Ischyrus amœnus, Lac. Monogr. Erotyl. p. 107[2] (nec Atlas Gen. Col.).
Callischyrus amœnus, Crotch, Cist. Ent. i. p. 435[3].

Hab. MEXICO[1 2 3], Jalapa, Trapiche (*Höge*), Orizaba (*Sallé*); COSTA RICA, Irazu (*Rogers*).

This very beautiful and well-known species appears to be not at all uncommon where it occurs in Mexico. The capture of two specimens by Rogers in Costa Rica is certainly a remarkable fact, and shows that many species may be more widely distributed than is generally supposed; these examples only differ from typical ones in having the apex of the elytra wholly blood-red in colour, instead of being marked with red and black.

An Orizaba specimen is figured.

Obs.—The figure in the Genera Col. Atlas, t. 131. f. 6, is not that of a specimen of this species, but appears to be taken from a specimen of *C. candezei*; the antennæ are imaginary, and do not represent those of any allied species.

3. **Callischyrus candezei.** (Tab. II. fig. 24.)

Callischyrus candezei, Crotch, Cist. Ent. i. p. 434[1].

Hab. GUATEMALA[1] (*Sallé*), Totonicapam, Capetillo, Calderas, San Gerónimo, Purula (*Champion*).

Resembles *C. amœnus*, but is easily to be recognized by the two black spots on the thorax, by the black epipleuræ of the elytra, and by the apex of the latter being wholly black.

MYCOTRETUS.

Mycotretus, Lacordaire, Monogr. Erotyl. p. 132 (1842) (Dej. Cat.; Chevr.).

Mycotretus is distinct from *Ischyrus* as now restricted by the eyes being finely

granulated, small in size, and little prominent; by the mentum being pentagonal, or at least roughly speaking so, and not trigonal; and by the apical joint of the maxillary palpi being wide, and round on its base, with a long truncate sensitive edge (thus much as in *Triplax*). Superficially the species are less elongate than those of *Ischyrus*, and we miss the undulate and often oblique posterior elytral fascia which is so characteristic of *Ischyrus*; on the average they are small in size, oblong, and very varied in colour and pattern.

Mycotretus is one of the largest and most widely spread of the genera of Erotylidæ, but is confined to the American continent. Lacordaire enumerated ninety species, Crotch's revision brought up the number to 134, the Munich 'Catalogue' (1876) records 143.

1. **Mycotretus ornatus.** (Tab. III. fig. 8.)

Erotylus ornatus, Duponch. Monogr. Erotyl. p. 20, t. 2. fig. 31[1].
Mycotretus ornatus, Dej. Cat. 3rd ed. p. 452[2]; Lac. Monogr. Erotyl. p. 137[3].
Mycotretus pectoralis, Dej. Cat. 3rd ed. p. 452[4].
Mycotretus terminalis, Lac. Monogr. Erotyl. p. 134[5].
Mycotretus melanostictus, Lac. l. c. p. 139[6].
Mycotretus maculosus, Lac. l. c. p. 140[7].
Mycotretus godartii, Lac. l. c. p. 146[8].
Mycotretus posticus, Lac. l. c. p. 147[9].

Hab. GUATEMALA, Cerro Zunil (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—COLOMBIA[6 8 9]; BRAZIL[1 2 4], Rio Janeiro[3 5 7].

This is one of the most variable species of the Erotylidæ, hence descriptions founded upon colour alone are of little value. The marks on the thorax are tolerably constant, viz. four spots transversely placed, a tridentate basal, and a broad, apical marginal mark never produced to the front angles. The spot on the head is (in the type) connected with the epistome by a line, but this seems unusual. In the type, and in our Cerro Zunil examples, the elytra are very much suffused with black, leaving towards the shoulders and scutellum a few fulvous marks. In the Cerro Zunil specimens the legs are yellow, but in those from the State of Panama they are black, as in the type. None of the forms appear to be constant as regards the colour of the legs, nor is the colour of the underside more so. The structural characters of the group, of which this species may be taken as the type, are as follows:—The mentum is pentagonal; the maxillary palpi have the terminal joint widely expanded, but not especially so; the prosternum is slightly compressed at the middle of its front margin; a fine raised line or plica is found on each side of the intercoxal process of the basal segment of the abdomen; the metasternum, including its episterna, is punctured, but sparingly, and also bears a fine plicate line diverging from the middle coxæ; the tibiæ are only moderately dilated towards the apex.

The species cited above as synonymous present absolutely no structural difference,

and probably several others described by Lacordaire are in the same position. Crotch in his revision [Cist. Ent. i. p. 450] mentions eleven species which he considered to be synonymous. I feel that no scientific advantage is gained by recording these species as distinct, but in some cases I have not seen sufficient specimens to enable me to corroborate his opinion or otherwise.

2. **Mycotretus nigropunctatus.**

Erotylus nigropunctatus, Duponch. Monogr. Erotyl. p. 22, t. 2. f. 34[1].
Erotylus puncticollis, Duponch. Monogr. Erotyl. p. 25, t. 2. f. 43[2].
Mycotretus nigropunctatus (Dej.), Lac. Monogr. Erotyl. p. 142[3].

Hab. Costa Rica, Volcan de Irazu (*Rogers*).—Brazil[1 2], Rio Janeiro[3].

In this species (if indeed it can be treated as distinct from *M. ornatus*) the tridentate mark has disappeared from the base of the thorax, and all the black marks tend to disappear, the last to go being the four transverse spots of the thorax and two spots on the elytra below the shoulders. Lacordaire mentions four varieties, but it is difficult to find two specimens entirely alike. One of our specimens from Irazu has the four thoracic spots, the three elytral spots, and black scutellum; in the other the four thoracic spots are very faint, the others are absent from the elytra, and the scutellum is yellow.

The legs in the two specimens from Irazu before me vary, being clouded and with fuscous tarsi in the more maculate example, and entirely yellow in the other.

3. **Mycotretus tigrinus.** (Tab. III. fig. 9.)

Erotylus tigrinus, Oliv. Enc. Méth., Ins. vi. p. 437[1]; Ent. v. p. 485, t. 3. f. 40; Duponch. Monogr. Erotyl. p. 22, t. 2. f. 35[2].
Mycotretus tigrinus, Lac. Monogr. Erotyl. p. 145[3]; Crotch, Cist. Ent. i. p. 451[4].

Hab. Mexico, Toxpam (*Sallé*); Guatemala, San Gerónimo (*Champion*).—Guiana, Surinam[1 3], Cayenne[4]; Brazil[2]; Amazons[4].

The present insect affords an instance of the uncertainty of using the form of the mentum as a sectional character: Crotch differs from Lacordaire in regarding it as "rounded in front." On examination it appears to me formed just as in *M. ornatus*, but the angles of the pentagonal raised portion apparently are a little less sharp. The striæ are not at all gemellate in any specimens I have seen. It is a variable species, the spots on each elytron and even on each side of the thorax not being symmetrical; but in our specimens, including one from Mexico, the spots are fewer and larger than in a typical one from Cayenne (*Reiche*), and those on the thorax are placed regularly, four in front in a square, three near the base, and two externally near the front angles. The scutellum is black in the San Gerónimo specimens, but I do not think there is ground for considering these distinctions of specific value. The abdominal lines are

long, nearly reaching to the margin of the basal segment; metasternal lines are evident in Cayenne examples, but I do not see them in the Guatemalan specimens.

M. leopardus, Kirsch, from Peru, is smaller, and has the markings large and more condensed; it also has the normal nine spots on the thorax in some specimens, and may be regarded as distinct.

Mr. Champion captured five specimens at San Gerónimo.

4. **Mycotretus maculatus.** (Tab. IV. fig. 1.)

Erotylus maculatus, Oliv. Encycl. Méth. vi. p. 436 (1791); Ent. v. p. 483. 33, t. 3. f. 36; Lac. Monogr. Erotyl. p. 192[1].

Mycotretus maculatus, Crotch, Cist. Ent. i. p. 438[2].

Mycotretus figuratus, Lac. Monogr. Erotyl. p. 159[3].

Hab. NICARAGUA, Chontales (*Janson*, *Belt*); PANAMA, Bugaba (*Champion*).—COLOMBIA[2 3]; GUIANA, Cayenne[2 3], Surinam[1]; AMAZONS, Para[2].

Olivier's figure, though very poor, is perhaps sufficient for the identification of this insect. The number of spots on the thorax is apparently variable: in some Cayenne specimens the two basal ones are united. The quadrate spot on the elytra behind the scutellum is often, but not always, divided by the suture, it being yellow at that part.

5. **Mycotretus fasciolatus.**

Mycotretus fasciolatus, Lac. Monogr. Erotyl. p. 150[1].

Hab. MEXICO[1], Cordova (*Höge*), Toxpam (*Sallé*); GUATEMALA, Chacoj, Sabo, and San Juan in Vera Paz (*Champion*); PANAMA, Bugaba (*Champion*).

The thorax sometimes is spotless: there are usually four spots arranged in a square. The elytral fascia varies in width, the other markings are more or less obliterated.

Many specimens.

6. **Mycotretus scitulus.**

Mycotretus scitulus, Lac. Monogr. Erotyl. p. 154[1]; Crotch, Cist. Ent. i. p. 454[2].

Hab. MEXICO[2], Toxpam (*Sallé*); COSTA RICA (*Van Patten*).—COLOMBIA, Bogota[2]; AMAZONS, Ega[2]; BRAZIL, Rio Janeiro[1 2].

Var. Minor, elytrorum epipleuris nigris.

Hab. GUATEMALA, Capetillo, Cerro Zunil (*Champion*).

This variety has a better claim to specific rank than some others which have been so honoured, on account of the black epipleuræ, a difference which in the Erotylidæ often indicates a species; but I do not regard this Guatemalan form as being more than a local race of *M. scitulus*.

7. **Mycotretus interstictus.**

Oblongo-ovatus, fulvus, antennis (basi excepta), verticis puncto, prothoracis punctis sex, scutello elytrorumque fasciis duabus, e lineolis tribus interstitialibus interruptis, nigris; elytris flavis, leviter punctato-striatis. Long. 6 millim.

Hab. NICARAGUA, Chontales (*Belt*).

Head and thorax very finely and closely punctured, shining; the former with a black dot on the crown, and a punctiform depression behind the dot; the latter with six black spots arranged four in a square with one on each side, the two basal spots well separated from the base. Elytra rather light yellow; between the striæ in the alternate interstices are three black lines interrupted by a yellow fascia near the base, the lines not reaching the base nor the apex; the two internal posterior lines are the longest, but do not come nearer than one quarter of the elytral length of the apex; posteriorly there is a minute indication of a fourth line near the margin; the extreme limb and inner edge of the epipleuræ are black.

Underneath the body is entirely of [a] clear fulvous-red, with the legs a little paler. Neither the metasternum nor its episterna are punctured.

The antennæ are black, with the two basal joints red, the third joint faintly piceous; the last-named joint is elongate, but not so long as the fourth and fifth joints together.

A single specimen.

8. **Mycotretus geminus.** (Tab. III. fig. 10.)

Oblongo-ovatus, fulvus, capite prothoraceque crebre subtiliter punctatis, hoc punctis sex nigris; elytris punctato-striatis, interstitiis subtilissime punctulatis, singulis maculis tribus prope basin (duabus interioribus geminatis) et duabus paullo pone medium punctiformibus, antennis articulis quinque ultimis, nigris. Long. 6–6½ millim.

Hab. PANAMA, Bugaba, David (*Champion*).

This appears to be a very distinct species, the three specimens which Mr. Champion obtained being alike in markings and almost so in size. In one example from Bugaba the two inner spots near the base of the elytra just touch each other. *M. geminus* has some affinity with *M. interstictus*, but the colour of the whole insect is very different, and there is no spot on the head. The example from David is of a somewhat clearer and lighter colour and has only four joints at the apex of the antennæ black. The figure is taken from a specimen from Bugaba.

9. **Mycotretus sexpunctatus.** (Tab. III. fig. 12.)

M. lepido similis, at verticis puncto et prothoracis punctis sex nigris distinctus. Oblongo-ovatus, læte flavus, subtilissime punctatus; antennis articulis quinque vel sex ultimis, capite puncto occipitali, prothorace punctis sex, elytris macula baseos antice et postice indentata fasciaque lata pone medium marginem haud attingente, nigris. Long. 6–6½ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This insect is very nearly related to *M. lepidus*, but the spots on the thorax are very distinct and constant, though the one on the head is not always present; in addition the black spot near the base of the elytra is twice indented before and behind (in *M. lepidus* there seems to be usually one notch in front), the posterior patch is less produced up the suture and placed more behind, and the elytral striæ are deeper. Numerous specimens were captured by Mr. Champion at Bugaba, and a few were found at 2000 to 3000 feet elevation on the Volcan de Chiriqui.

10. **Mycotretus normalis.**

Oblongus, ovatulus, saturate rufus, capite prothoraceque crebre sat fortiter punctatis; elytris punctato-striatis, macula magna basali subrotundata, fascia mediana alteraque subapicali marginem haud attingente, nigris; scutello piceo. Long. 6 millim.

Hab. Mexico, Cordova (*Höge*).

Rather elongate and parallel, the head and thorax spotless, rather strongly punctured; antennæ rufous, with five joints at the apex black; elytra longer than in *M. fasciolatus*, with a large spot on their base just reaching the humeral callus, not touching the scutellum, a common median fascia not reaching the lateral margins, and a subapical common lunate fascia before the apex. Legs and underside yellow. A very puzzling insect, looking like a variety of some other species, but no doubt distinct, of which there is only one rather discoloured example in Höge's collection.

11. **Mycotretus læviventris.**

Mycotretus læviventris, Crotch, Cist. Ent. i. p. 454[1].

Hab. Mexico[1], Toxpam (*Sallé*).

Thorax with six punctiform spots. Elytra with two large fascia-like black patches, the hinder one somewhat heart-shaped: neither of them touch the suture or margins. The type is in the Cambridge collection. Four specimens of this species in Sallé's collection are labelled with the MS. name of *M. parilis*, Chevr.

12. **Mycotretus ternotatus.** (Tab. III. fig. 13.)

Oblongus, leviter ovatus, flavus, pectore piceo, antennarum articulis sex ultimis, verticis macula rotundata, prothoracis macula discoidali punctisque duobus, elytrorum lunula baseos fasciaque late pone medium valde indentata, nigris. Long. 6 millim.

Hab. Mexico, Jalapa (*Höge*).

The only species known to me which has the thorax similarly marked to this insect is *M. signatellus*, Crotch. The large central spot on the thorax, with a smaller one on each side, and the large spot on the head, will separate this species from any other of this genus. The antennæ have five joints at the base yellow. The elytra have the suture and lateral limb very narrowly piceous; the basal mark is bilobed, somewhat

lunulate, with the convex side reaching the base; the fascia is complete, the portion beyond the fifth stria being much narrower than the central part; the interstices of the striæ are finely punctulate. A single specimen.

13. **Mycotretus pallidior.** (Tab. II. fig. 18.)

Ischyrus pallidior, Crotch, Cist. Ent. i. p. 428[1].

Mycotretus nigrotinctus, Crotch, loc. cit. p. 454[2].

Hab. MEXICO[1], Cordova (*Höge*), Toxpam, Playa Vicente, Teapa[2] (*Sallé*); GUATEMALA, San Isidro, Zapote, Sinanja (*Champion*); NICARAGUA, Chontales (*Janson*).

This is so evidently a *Mycotretus* that I am surprised that Crotch should have described it as an *Ischyrus*. It is, however, the same species as he has subsequently described as *Mycotretus nigrotinctus*. There is a specimen from Teapa in Sallé's collection, but it is labelled *M. bisellatus*, Chevr.; I have not found any published allusion to this MS. name, and it is, indeed, applied to a wholly different insect in the same collection. There is a variety in which the thorax wants the four transverse spots, and has only two dots to represent the mark on the front margin, but I have only seen one specimen from Toxpam so marked. The scutellum is usually black; it is, however, sometimes yellow in the middle.

Many specimens have been received of this insect.

14. **Mycotretus bistrigatus.**

Mycotretus bistrigatus, Lac. Monogr. Erotyl. p. 188[1].

Hab. MEXICO[1] (*Höge*), Toxpam (*Sallé*).

Var. Elytris nigris, basi apiceque rufis. (Tab. III. fig. 11.)

Hab. MEXICO, Parada (*Sallé*).

Varies from the type form, which has rufous elytra with a narrow black line, to one in which the black line has almost disappeared (I have not seen a variety with wholly yellow elytra); and, on the other hand, there is a variety with black elytra, with rufous marks at the base and apex. *M. bistrigatus* may, however, always be known by the black margins of the thorax, broad in front and at the base, and narrow on the sides, and by the colour of the legs.

A specimen of the variety from Parada is shown in the figure.

15. **Mycotretus nitescens.**

Mycotretus nitescens, Crotch, Cist. Ent. i. p. 445[1].

"*M. opalescenti* affinis, sed totus rufo-sanguineus, antennis clava infuscata. L. 2 lin."

Hab. MEXICO, Toxpam (*Sallé*); GUATEMALA, Las Mercedes, Pantaleon (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—AMAZONS, Ega[1].

Very ovate, narrowed behind almost from the shoulders to the apex of the elytra, very finely punctured, and having the punctured striæ almost obsolete; entirely of a fine chestnut-red, with the exception of the antennæ, of which the seven apical joints are black. The third to the sixth joints of the antennæ are elongate; the seventh joint is triangular and forms the beginning of the club, the latter being in consequence long and laxly articulated. The whole upper surface, but especially the elytra, has a nacreous reflection. This insect is labelled *Mycotretus luteipes*, Lac., in the Sallé collection, but does not accord with the description of that species. I have examined Crotch's type, and it is clearly conspecific with our insect. About a dozen examples in all are before me.

16. **Mycotretus sallæi.** (Tab. IV. fig. 2.)

Mycotretus Sallæi, Crotch, Cist. Ent. i. p. 452[1].

Hab. Mexico [1], Toxpam (*Sallé*), Cordova (*Höge*).

This fine species is easily recognized by the thorax having three spots placed in a line transversely, as in *M. spadiceus*. *M. sallæi* is equal in size to that insect, but is distinguished from it by the large black patch on the basal half of the elytra. Very few specimens have come under my notice.

17. **Mycotretus spadiceus.** (Tab. III. figg. 16, 17.)

Oblongo-ovatus, antice posticeque angustatus, parum convexus, castaneo-rufus; prothorace punctis tribus transversim dispositis (mediano lineari), elytris puncto laterali, antennis (articulis tribus primis prætermissis) tarsisque, nigris, his basi apiceque rufis; supra subtilissime punctatus, elytris tenuiter puncto-lineatis vix striatis, interstitiis lævibus. Long. 8 millim.

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba (*Champion*).

Var. *α*. Elytris, macula altera, suturam propiore fasciam obliquam aliquando præbente, nec marginem nec suturam attingente. Long. 7–8 millim.

Hab. British Honduras, Belize (*Blancaneaux*); Panama, Bugaba (*Champion*).

Var. *β*. Prothorace bipunctato, elytris puncto laterali minimo.

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba (*Champion*).

This is a variable species, and difficult to place; it is, at first sight, very like the var. B of *M. nigro-punctatus*, Duponch., but is really quite distinct—there is an essential difference not only in the number of thoracic spots but in their position, the antennæ (and I believe the legs) are longer, the tibiæ are wider, &c. The lateral spot on the elytra is near, but not on, the middle of the margin; both it and the inner spot when present show a tendency to divide, but in the fasciate variety they join, often retaining the indentate form. In var. *β* the linear middle thoracic spot has disappeared. I

have only seen two examples of this form. The body and legs seem to be constant in colour. The abdominal lines are long, as in *M. sobrinus*.

We figure a specimen of the type (fig. 16), and one of the var. *α* (fig. 17), both from Bugaba.

18. **Mycotretus panamanus.** (Tab. III. fig. 14.)

Breviter ovalis, rufo-testaceus, capitis vertice, prothoracis maculis duabus magnis, scutello elytrorumque fascia lata, ad suturam interrupta, nigris; antennarum articulis sex ultimis nigro-piceis. Long. 4½ millim.

Hab PANAMA, Bugaba (*Champion*).

In the markings of the elytra this species a little resembles *M. deyrollii*, Crotch, but in the large spots on the thorax it is unlike any other known to me.

Two specimens.

19. **Mycotretus sandicatus.**

Oblongo-ovatus, læte rufo-castaneus, subtilissime crebre punctatus, elytris basi fasciaque lata subobliqua et antennis (articulis duobus primis prætermissis) nigris. Long. 9 millim.

Hab. GUATEMALA, Purula, San Gerónimo (*Champion*).

Oblong; not much, but evenly, narrowed before and behind; the head and thorax very finely but closely and distinctly punctured. The elytra are finely punctate-striate, the interstices scarcely visibly punctate; each with a large black spot around the scutellum, but not reaching the callus, and a fascia just behind the middle, the latter reaching rather nearer to the apex at the suture than at the sides and being wider in that part appears somewhat oblique. With the exception of the antennæ and these markings, the colour is uniformly a rich chestnut-red. The mentum is acute in front; there are no abdominal lines; and the metasternum and episterna are impunctate.

20. **Mycotretus illustris.** (Tab. III. fig. 15.)

Mycotretus illustris, Crotch, Cist. Ent. i. p. 440[1].

Hab. MEXICO[1], Toxpam (*Sallé*).

One of the largest and most beautiful species of this genus. The apical joint of the maxillary palpi is much widened in this and the following four species.

21. **Mycotretus psittacus.**

Mycotretus psittacus, Lac. Monogr. Erotyl. p. 167[1].

Hab. ? MEXICO[1].

We have not received specimens of this species, nor have I seen any from Mexico. In Crotch's collection there is an example labelled "Bahia," which is perhaps the correct locality.

22. **Mycotretus guatemalæ.**

Mycotretus Guatemalæ, Crotch, Cist. Ent. i. p. 441[1].

Hab. GUATEMALA[1].

Very nearly allied to *M. psittacus*.
Unique in the late Mr. Crotch's collection.

23. **Mycotretus pecari.** (*M. peccari*, Tab. III. figg. 18, 19.)

Mycotretus pecari, Lac. Monogr. Erotyl. p. 167[1].

Hab. NICARAGUA, Chontales (*Belt*, *Janson*); PANAMA, Bugaba (*Champion*).—SOUTH AMERICA, Colombia[1].

This is a very variable species, so far as the extension of the fasciæ on the elytra is concerned, otherwise I should have been inclined to think that our insect from Panama was distinct. The two specimens we have received from Nicaragua are even more divergent in pattern and smaller; but one example from Bugaba is intermediate, and I have little doubt but that all these are only forms of one species. It is probable that *M.* 14-*guttatus*, Lac., is also only another variety. The constant points are the fuscous tarsi, and black antennæ with two basal joints red; and that the black elytral spots tend to form three fasciæ, which at last become confluent. When the two basal fasciæ only are confluent we have var. A of Lacordaire; when the three basal yellow fasciæ are complete it is var. B of Lacordaire. The single specimen of *M. pecari* in the Cambridge collection has the black more extended, and occupying the whole apex; and *M.* 14-*guttatus* seems only to differ from it in having the whitish fasciæ reduced to seven roundish spots on each elytron.

The specimens figured are (fig. 18) a specimen from Bugaba; (fig. 19) an extreme variety from Chontales.

24. **Mycotretus elegans.** (Tab. IV. fig. 3.)

Oblongus, antice posticeque rotundatus, parum convexus, saturate rufo-ferrugineus, subnitidus; elytris nigris, macula transversa basali, puncto subhumerali fasciisque duabus ad suturam anguste interruptis (una mediana altera subapicali), flavis; antennis nigris, articulis tribus basi rufis. Long. 9 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Head and thorax very finely punctured, red; the latter often suffused with some indistinct cloudy markings, which show a tendency to represent some of the spots in other species. Elytra finely punctate-striate, black, with three narrow yellow fasciæ—the first interrupted by the humerus, and consisting of a dot on the margin, and a narrow transverse band on the base reaching the scutellum, but leaving a small black spot on the base next to it; the second in the middle, widest on the margin, and a little oblique; and the third near the apex, and slightly arcuate; all three are very narrowly

interrupted at the suture. Scutellum, underside, and legs entirely red. The abdominal and metasternal lines distinct, but very fine.

This insect has caused me some perplexity, for although it is apparently allied to *M. guatemalæ*, it is slightly different structurally. It does not, however, differ so much from the form of the *M. pecari* group as to leave much doubt that it will be best placed there. The mentum is, roughly speaking, "rounded," and the maxillary palpi have the apical joint lunate and wide.

The antennæ have the basal three, and sometimes the fourth and fifth, joints red. Five specimens.

25. **Mycotretus tibialis.**

Saturate fulvus, elytris flavis, singulis maculis septem duabus baseos, duabus ante medium fasciam quasi præbentibus, duabus pone medium obliquis, et lunula ante apicem, nigris; antennis (articulis duobus primis prætermissis), tibiis tarsisque nigris. Long. 10 millim.

Hab. NICARAGUA, Chontales (*Belt*).

In form and size this insect is similar to *M. pecari*; and it might pass for one of the numerous varieties of that species, but that the markings do not appear as though they would ultimately form, or had been derived from, the ordinary pattern of fully-coloured examples of *M. pecari*. The black tibiæ and tarsi are also abnormal, though perhaps not of much importance in this genus; in the absence of connecting links it is impossible to say whether this indicates specific difference or not.

There is only one specimen.

26. **Mycotretus picto-piceus.**

Oblongus, parum ovatus, nitidus, piceus, antennis nigris, articulis duobus basi pedibusque dilute piceis, elytris tenuiter punctato-striatis, interstitiis fere lævibus, basi singulis annulo duplici flavo, humerum et maculam juxta scutellum includente. Long. $7\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

This is a species with a puzzling aspect; it is of the form of *M. ornatus* and its allies, but by the rather strongly widened palpi should come later on in the genus. *M. picto-piceus* is of a nearly uniform pitchy-brown colour above, with the legs and base of the antennæ and underside rusty-red. The head is paler than the thorax, the punctuation of both being very fine. The elytra are smooth, with fine punctured striæ; the margin and some indistinct indications of a narrow wavy fascia near the apical third are paler than the ground-colour; two detached spots near the base of each elytron are surrounded by a luteous line, which is prolonged backwards along the margin. The underside is very smooth.

A single specimen.

27. **Mycotretus vittatus.** (Tab. III. fig. 21.)

Oblongus, parum ovatus, saturate rufo-testaceus, parcius sat profunde punctatus, capite puncto verticali, prothorace punctis quinque, scutello, elytris sutura, vitta sat lata limbo laterali epipleurisque, antennarum articulis quinque ultimis et tibiis, nigris; elytris fortiter punctato-striatis. Long. 6 millim.

Hab. GUATEMALA, Pantaleon, Zapote (*Champion*).

Head red, with the exception of a vertical spot; rather deeply and not very closely punctured; antennæ light yellow at their base, the five apical joints black. Thorax rather closely and deeply punctured; deep rusty-red, with the lateral margins narrowly black, and with two spots touching the front margin and three on the base. The elytra have the suture as far as the second stria, the entire lateral limb and epipleuræ, and a vitta between the fourth and sixth striæ (not reaching either the base or the apex), deep black and sharply defined.

This species has much the appearance of an *Ischyrus* owing to its parallel form.

Two specimens. We figure the one from Zapote.

28. **Mycotretus alternans.**

Sordide rufo-testaceus, breviter oblongo-ovatus, fere glaber; elytris flavis, subtiliter puncto-lineatis, interstitiis alternis fuscis; antennis (articulis tribus primis exceptis), prothoracis puncto in margine antico et altero basali triangulari scutelloque, nigris. Long. 6–6½ millim.

Hab. PANAMA, Bugaba (*Champion*).

A very peculiar species as regards coloration. The head is unspotted; the thorax bears a minute dot in the centre of the front margin, and another in the middle of the base. The elytra are lighter in colour than the thorax; the interstice between the first and second striæ and each alternate one is fuscous, the striæ themselves being blacker; the posterior part and also the two adjoining interstices after the fifth stria are suffused with fuscous; probably, from the appearance of our specimens, in life these parts have a nacreous hue. Allied to *M. dorso-notatus*, but lacking the double linear elytral spots. Five specimens.

29. **Mycotretus laccophilinus.** (Tab. IV. fig. 5.)

Oblongo-ovatus, rufo-testaceus; elytris punctato-striatis, maculis duabus pallide flavis, una laterali infra humerum, ægre discreta, altera transversali, versus apicem; antennis nigris, articulis tribus basalibus testaceis. Long. 6 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species somewhat resembles *M. alternans*; its form is very evenly ovate, nearly elliptical, and rather convex; the head and thorax are light chestnut-red, smooth and shining; the elytra are nearly of the same colour, but the punctured striæ are faintly fuscous, the punctures in them small and very closely placed, but becoming obsolete before the apex. The spots, two on each elytron, are whitish-yellow; the legs and underside of the same light chestnut-red as the rest of the body. This and some other

species of *Mycotretus* are very suggestive of the genera of Dytiscidæ after which I have named them.

A single specimen.

30. **Mycotretus bipunctatus.**

Oblongo-ovatus, luteo-flavus vel obscure castaneus, subtilissime crebre punctatus, prothorace punctis duobus discoidalibus, prope basin, antennisque nigris, his articulis duobus primis testaceis. Long. 5–6 millim.

Hab. PANAMA, Bugaba (*Champion*).

The form of this species is broader and more ovate than that of *M. alternans*; the colour is clearer, although varying, two of the specimens being of a pale luteous-yellow, and two others more nearly of a chestnut-red, with the punctures of the striæ fuscous, while one is almost intermediate. *M. bipunctatus* also appears to be allied to *M. distigma*, Lac., but has no lateral spot upon the elytra. These latter are very smooth and shining, with eight fine punctate striæ, and very minute punctures in the interstices. The underside is smooth. The maxillary palpi have their terminal joint securiform, but not lunate or very much widened. The third joint of the antennæ is sometimes partly testaceous.

Five specimens were captured at Bugaba.

31. **Mycotretus stramineus.**

Oblongus, subparallelus, postice parum attenuatus, pallide testaceus, antennis (articulis tribus basalibus exceptis) nigris, tarsis fuscis; capite prothoraceque minutissime punctatis, fere lævibus; elytris punctato-striatis, punctis fuscis. Long. 6½ millim.

Hab. PANAMA, Bugaba (*Champion*).

An evenly oblong, very slightly ovate species, of nearly uniform testaceous-yellow colour, the thorax faintly clouded, and the punctures on the elytra fuscous, the striæ hardly impressed. The underside is smooth; the mentum is subpentagonal, scarcely angulated. This species is difficult to place: I think its nearest allies will prove to be *M. alternans* and *M. dorso-notatus*. There is a slight resemblance between *M. stramineus* and some species of *Brachysphenus* (e. g. *B. bistripunctatus*), but I do not think it can be placed in that genus. The prosternum is hardly compressed; there are short abdominal lines. Six specimens.

32. **Mycotretus luteolus.**

Oblongo-ovatus, dilute castaneus; capite prothoraceque crebrius minute punctulatis, elytris leviter punctato-striatis, interstitiis sublævibus; corpore subtus fere lævi, metasterno medio minutissime punctulato, episternis vix punctatis; antennis pedibusque nigris, his trochanteribus, illis articulis tribus primis rufis. Long. 6 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Although at first sight this insect appears very similar to *M. cruentus* or *M. lesueuri*,

and is, indeed, in a manner intermediate, it is quite distinct, and is probably one of a series of closely allied species. The colour is rusty-red. *M. luteolus* is less narrowed behind than *M. cruentus*; the punctuation of the thorax is thicker; the episterna are wholly yellow; and the fine punctures in the striæ are fuscous, which gives them a lineate appearance: I do not find the latter, however, a character of importance, and it sometimes occurs in various species of red and yellow Triplacides.

33. **Mycotretus cruentus.** (Tab. III. fig. 22.)

Oblongus, postice paullulum angustatus, saturate sanguineus; prothorace minute parcius punctulato; antennis (basi excepta), pedibus et episternis metasternalibus nigris, his lævibus. Long. 6 millim.

Hab. GUATEMALA, Zapote, San Juan in Vera Paz, Senahu (*Champion*).

Much narrower and less ovate than *M. lesueuri*, to which by its black legs this species is analogous. The colour is a brilliant and deep blood-red. The head and thorax are distinctly and rather sparingly punctured; the latter is almost twice as wide as long, the sides narrowing from the base. Scutellum smooth. Elytra with the striæ deeper and not so regular and with larger punctures than in *M. lesueuri*, and narrowing at once from the base to the apex. Underside very smooth; the episterna and sides of the breast black, the former quite smooth. Legs black, the tarsi rufous. Antennæ black, with five joints at the base red.

34. **Mycotretus hirudo.**

Oblongus, subparallelus, saturate sanguineus, antennis pedibusque nigris; capite crebre, prothorace parcius distincte punctatis; elytris leviter punctato-striatis, interstitiis subtilissime vix visibiliter punctatis; corpore subtus lævi. Long. 6 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Very closely allied to *M. cruentus*, but differing from it in the following respects:—the thorax is more sparsely punctulate; the antennæ are wholly black, with the exception that the second joint is pitchy-red; the tarsi are black; the striæ of the elytra have more numerous and finer punctures; and the underside of the body is wholly red.

It is at the same time rather a narrower and more parallel insect. In the single specimen received the elytra have a discoloured blackish tinge towards their apex.

35. **Mycotretus lesueuri.** (Tab. III. fig. 20.)

Erotylus Lesueuri, Chevr. Col. Mex. Cent. ii. fasc. 8. no. 175 (1835)[1].
Mycotretus Lesueuri, Lac. Monogr. Erotyl. p. 155[2].

Hab. MEXICO[1 2], Toxpam, Juquila (*Sallé*), Cerro de Plumas, Esperanza, Jalapa (*Höge*); BRITISH HONDURAS, R. Sarstoon, Belize (*Blancaneaux*); GUATEMALA, Las

Mercedes, Cerro Zunil, Capetillo, Dueñas, Chiacam, Senahu, San Juan in Vera Paz (*Champion*).

Among the *Mycotreti* with the body and elytra wholly red, this is one of the most easily recognized, the legs being wholly black, and the coxæ alone being of the colour of the body. The punctuation is excessively fine. The metasternal and the abdominal lines are very distinct, the latter long and plicate (*i. e.* raised at least on one side). The sides of the metasternum and its episterna are impressed with a few large punctures; and the abdomen is also punctured, especially at the sides. The mentum is distinctly pentagonal. The maxillary palpi are moderately widened at their apex.

It appears to be a very common insect in Central America.

The figure is taken from a Capetillo specimen.

36. **Mycotretus savignyi.**

Mycotretus Savignyi, Lac. Monogr. Erotyl. p. 156 [1]; Crotch, Cist. Ent. i. p. 145 [2].

Hab. Mexico, Juquila, Toxpam (*Sallé*); Nicaragua, Santo Domingo in Chontales (*Janson* [2]); Costa Rica (*Van Patten*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Colombia [1 2].

The Costa Rican specimens are large, and there is a small form, which at the same time seems more ovate, from the Volcan de Chiriqui; but I detect no important difference in them, nor in the examples from Mexico. The latter locality is rather unexpected, and Herr Höge does not seem to have met with it.

37. **Mycotretus sobrinus.**

Brachymerus sobrinus, Guérin, Rev. Zool. 1841, p. 154 [1].
Mycotretus sobrinus, Lac. Monogr. Erotyl. p. 186 [2].
Mycotretus silaceus, Lac. loc. cit. p. 187 [3].

Hab. Mexico, Toxpam (*Sallé*).—Brazil [1 2 3], Rio Janeiro, San Paulo.

This species does not appear to be common; and the Mexican locality is interesting, as I have not seen it from any of the intermediate countries. The femora are wide, and the tibiæ (especially the middle pair) widened. The abdominal lines are long and plicate. Palpi very wide.

38. **Mycotretus ægrotus.**

Oblongus, parum ovatus, livide testaceus; capite prothoraceque minute crebre punctatis; elytris punctato-striatis, interstitiis vix punctatis; corpore subtus sublævi, metasterno utrinque punctulato. Antennis nigris, articulis tribus vel quatuor basi testaceis. Long. 5–6 millim.

Hab. Costa Rica, Volcan de Irazu (*Rogers*).

A species not very satisfactorily discriminated; but which in its long form and fine multipunctate elytral striæ, pale colour, and punctured thorax may be compared to *M. luteipes*. It is, however, much larger than that insect; its thorax is much more

finely punctate; and its metasternum being very clearly punctate on each side serves to show that it is a wholly distinct species. The palpi have their terminal joint strongly widened.

Of six examples obtained, three are rather immature.

39. **Mycotretus luteipes.**

Mycotretus luteipes, Lac. Monogr. Erotyl. p. 189[1].

Hab. MEXICO[1], Toxpam (*Sallé*), Cerro de Plumas (*Höge*); GUATEMALA, Senahu and Tactic in Vera Paz (*Champion*).

Only two or three of the specimens which stood under the name of *M. luteipes* in Sallé's collection are referable to it. I have carefully studied Chevrolat's type, which agrees very well with Lacordaire's description, but is somewhat discoloured. *M. luteipes* very much resembles in size and in its oblong form *M. pygmæus*; the elytral striæ are, however, much less deep, and have numerous small punctures; the thorax is thickly, distinctly, and rather deeply punctured.

40. **Mycotretus consanguineus.** (Tab. III. fig. 23.)

Oblongus, ovatus, postice parum attenuatus, læte sanguineus; capite prothoraceque parce punctulatis; elytris sat profunde punctato-striatis, metasterno medio et scutello leviter punctulatis; antennis nigris, articulis tribus basalibus rufis. Long. $7\frac{1}{2}$ millim.

Hab. GUATEMALA, Cubilguitz (*Champion*); PANAMA, Bugaba (*Champion*).

Very near to *M. sanguineus*, Duponch., but differing from that species in having the tarsi red. The head and thorax are distinctly, but not deeply, and rather sparingly punctured, less distinctly, however, than in *M. sanguineus*; the breast in both species is very smooth, but in our insect (under a good lens) a few scattered punctures will be found on the middle of the metasternum.

The specimen figured is from Cubilguitz.

41. **Mycotretus hæmaticus.**

Oblongus, ovatus, saturate sanguineus; capite prothoraceque parce distincte punctulatis; antennis nigris, articulis tribus basalibus rufis; metasterno punctulato; scutello subtilissime punctato. Long. $7\frac{1}{2}$ millim.

Hab. COSTA RICA (*Rogers*).

The head in this species is rather coarsely punctured, more closely at the front than at the base; the epistome is impressed on each side with a round fovea. The palpi have a widely transverse apical joint. The antennæ have only three joints red, and even the tip of the third joint is black. The thorax is sparsely and very distinctly punctulate; it is transverse, but not twice as wide as long; the sides are a little rounded, narrowing in front; the base is sinuate, with only a trace of the row of punctures along the margin. The elytra are long, contracted towards the apex, with

rather fine and closely punctured striæ, and smooth interstices. The sides of the metasternum are distinctly punctured.

One specimen.

42. **Mycotretus incarnatus.**

Oblongus, parum ovatus, læte sanguineus; capite prothoraceque parce sat profunde punctatis; antennis nigris, articulis quinque basalibus flavis; subtus lævis; scutello haud punctulato. Long. 5 millim.

Hab. MEXICO, Jalapa (*Höge*); GUATEMALA, Panima in Vera Paz (*Champion*); NICARAGUA, Chontales (*Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This species is smaller than *M. consanguineus* or *M. hæmaticus*; it differs from the former in having five joints at the base of the antennæ yellow, as well as in the wholly impunctate underside. The head is more finely and more thickly punctured than the thorax; the antennæ are about as long as the head and thorax, their third joint rather longer than the following two joints united; the palpi are not especially widened, *i. e.* not as in *M. noterinus*. The thorax is transverse, but not twice as wide as long; it is not very much narrowed, in fact it only has the sides a little turned in at the anterior angles. The elytra are striate, the striæ with deep punctures. Abdominal lines short and very indistinct; metasternal lines quite distinct.

About a dozen examples in all are referable to this species.

43. **Mycotretus rubidus.**

M. incarnato summa affinitate, magis ovatus, antennis brevioribus. Oblongo-ovatus, saturate rufus vel sanguineus; capite prothoraceque parce distincte punctatis, elytris fortius punctato-striatis; antennis articulo tertio duobus sequentibus longiore, his brevibus, articulis sex ultimis nigris. Long. $5\frac{1}{2}$ millim.

Hab. GUATEMALA, Chacoj, Panzos (*Champion*).

So like *M. incarnatus* as to be with difficulty distinguished from it at first sight. It is, however, more convex and more oval, not having the sides so parallel in the basal half of the elytra. The antennæ are distinctly shorter; the fourth and fifth joints are especially shorter (being distinctly elongate in *M. incarnatus*, while in this species these joints are hardly longer than wide); the fifth joint is often infuscate; and the sixth and seventh joints are very short, and like the club are black. The episterna are very obsoletely punctured.

One of the specimens from Chacoj is of a ferruginous-red; but all the red species vary in the intensity of the red colour, though some never attain the sanguineous hue. The three specimens received were captured in the Polochic valley.

44. **Mycotretus pygmæus.**

Mycotretus pygmæus, Lac. Monogr. Erotyl. p. 156[1]; Crotch, Cist. Ent. i. p. 145[2].

Hab. MEXICO, Toxpam (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*); NICARAGUA,

Chontales (*Janson* [2]); Panama, Bugaba (*Champion*).—Colombia [1], Bogota [2]; Guiana, Cayenne [1 2].

Entirely of a fine blood-red, with the exception of the terminal six joints of the antennæ, which are black. The last four joints of the latter form a gradual and broad club; the fourth, fifth, and sixth joints are short, scarcely longer taken together than the third joint. The head and thorax are distinctly but rather sparsely punctured; the base of the latter is bisinuate, with a median lobe, on each side of which it is depressed, the depression forming a wide fovea. The elytra are punctate-striate, the striæ with many small closely-placed punctures and becoming evanescent before the apex; they are more convex but not so long as in *M. luteipes*. From most of its allies the comparative shortness of the antennæ will separate this species. The legs are yellow.

I have not seen many examples of this little species. Crotch [2] refers to it as from Bahia; but the specimen from this locality in his collection is a wholly different insect from the type, of which he appears to have one of Lacordaire's original examples from Cayenne. I have not seen any of the Nicaraguan examples referred to it.

45. **Mycotretus coccidulinus.** (Tab. III. fig. 24.)

Oblongus, ovatus, saturate sanguineus, crebrius sat fortiter punctatus; antennis breviusculis, articulo tertio duobus sequentibus æquali, articulis sex ultimis nigris. Long. 5 millim.

Hab. British Honduras, Belize, R. Hondo (*Blancaneaux*); Guatemala, Capetillo, Cubilguitz, Chiacam (*Champion*).

Rather larger than *M. pygmæus*, of a deeper and not so vivid a blood-red colour. The punctuation of the thorax is thicker, the large punctures being more numerous, although at the same time there is often space between them for other punctures of similar size. The elytra are not so convex, the striæ have numerous and distinct punctures, and there is a very fine and irregular interstitial punctuation. The antennæ have their third joint not longer than the fourth and fifth joints taken together.

The stronger punctuation of the thorax, together with the somewhat shorter elytra and smaller size, will separate this species from *M. luteipes*.

Not many examples. A specimen from Rio Hondo is figured.

46. **Mycotretus crudus.**

M. coccidulino summa affinitate, oblongus, saturate sanguineus, subtus fortiter subrugose punctatus; capite prothoraceque crebre, profunde et distincte punctatis; elytris leviter punctato-striatis, interstitiis minute vix punctatis; antennis nigris, articulis duobus basi rufis. Long. 5 millim.

Hab. Mexico, Atlisco in Puebla (*Höge*).

Very like *M. coccidulinus*, but differing from it in important points of structure and sculpture. The head and thorax are more thickly and more distinctly punctured. The humeral callus of the elytra is obvious (in *M. coccidulinus* it is indistinct); the striæ

are fine; and the punctures in the latter are more numerous, and not so large or deep. The antennæ are shorter, the third to the seventh joints especially shorter. The most striking difference is, however, the strong punctuation of the underside, showing an alliance to *M. pygmæus*; but the palpi are less widened at the tip, and are, I think, longer than in that insect; the underside is also slightly pubescent. It is therefore a rather abnormal species, and I think has some claim to affinity with *Tritoma*, the short scutellar striæ being indistinctly indicated. One specimen.

47. **Mycotretus cribratus.**

Oblongus, ovatulus, saturate sanguineus; capite prothoraceque parce profunde punctatis; elytris punctato-striatis, striis fortiter profunde punctatis; antennarum articulis quinque ultimis nigris. Long. 3 millim.

Hab. GUATEMALA, Senahu, Chacoj, Teleman, Sinanja (*Champion*); PANAMA, Bugaba (*Champion*).

Of the same size as *M. miniatus*, and with the head formed as in that and the allied species; the palpi very wide at their apex; the antennæ rather short and robust, their third joint as long as the following two joints united. Thorax narrowing in front, the base distinctly margined. Elytra with very large and distinct punctures in the striæ, especially in the external ones commencing from the fourth stria. Underside rather strongly punctate; the prosternum almost rugose in front. Metasternum smooth in the middle; the sides with large separate, the episterna with close, punctures, the space between the latter finely alutaceous. A very considerable series of specimens of this species was obtained by Mr. Champion at Bugaba; single examples only occurred at each of the Guatemalan localities. The Guatemalan specimens are apparently referable to the same species; but I regard the Bugaba examples as typical, it being from them that the description is made.

48. **Mycotretus nigripes.**

Oblongus, parum ovatus, saturate sanguineus, pedibus, tarsis exceptis, nigris; capite prothoraceque parcius sat fortiter punctatis; elytris fortiter punctato-striatis, striis ad apicem obliteratis. Long. 3 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

More parallel and less narrowed in front than *M. miniatus*. The head is punctured as in well-developed examples of that species, viz. sparsely. The thorax is more sparingly punctured than in any example of *M. miniatus* I have seen; it is also of nearly equal width before and behind, with the front angles more depressed, so that it is more convex. The antennæ are black, excepting the two basal joints; their third joint is not much longer than the second. The underside is more roughly punctured than in *M. miniatus*, and is entirely clear red. The legs are black, with red tarsi. The punctuation of the elytra is much stronger, and the punctures in the striæ less numerous than in *M. miniatus*.

A single specimen.

49. **Mycotretus dytiscoides.**

Mycotretus dytiscoides, Lac. Monogr. Erotyl. p. 184[1].

Hab. Mexico[1], Toxpam, San Andres Tuxtla (*Sallé*).

There are four examples of a very small *Mycotretus* in Sallé's collection which I think should bear the above name; three of these have the breast and legs infuscate, thus agreeing better with the description of *M. misellus*. The locality of Lacordaire's type of that species is unknown; Crotch's specimen (from Reiche) and his remark, "underside smooth," do not agree with Lacordaire's description.

The present species agrees very well with the description of *M. dytiscoides*, excepting in the colour of the legs and breast; this appears to be possibly due to variation only, as we have one specimen from the same locality with these parts quite yellow. It being impossible now with certainty to identify *M. misellus*, I propose to ignore that species altogether. We have before us a specimen of *M. dytiscoides* received from Chevrolat by Crotch, and with it our species very nearly agrees. It is quite possible, however, that it is after all only a pallid form of *M. miniatus*.

It is also a question whether these species should not be placed in *Paratritoma*, a genus I propose for some small species which are also much punctured on the sterna, and in which the mentum, or rather its basal portion, is so much reduced as to be of no value for classification. This point can hardly be decided till the very numerous allied forms have been more studied.

50. **Mycotretus miniatus.**

Mycotretus miniatus, Lac. Monogr. Erotyl. p. 183[1].

Hab. Mexico[1], Toxpam (*Sallé*).

The metasternum, with its episterna, the legs, and generally the scutellum are black; the underside, with the exception of the abdomen, is coarsely and deeply punctate. Pronotum distinctly punctured, narrowed from the base to the front angles, which are a little acute.

Five examples in Sallé's collection.

Var.? Metasterno rufo, minus fortiter punctulato, episternis nigris.

Hab. Guatemala, San Gerónimo (*Champion*).

One specimen, in other respects agreeing with *M. miniatus*.

51. **Mycotretus noterinus.**

Oblongus, modice ovatus, castaneus vel flavus; capite prothoraceque subtilissime minute punctatis, nitidis; elytris subtiliter punctato-striatis, punctis sat numerosis, interstitiis lævibus; antennis, capite cum prothorace longitudine æquantibus, articulis sex ultimis nigris, articulo tertio duobus sequentibus vix æquali; palporum maxillarium articulo apicali perlato; corpore subtus haud punctulato. Long. 5 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

This is a somewhat abnormal species, and should perhaps form the type of a new genus. The maxillary palpi are very wide, and as long as in *Triplax*. The club of the antennæ is very gradually enlarged from the eighth joint, and the terminal joint is narrower than the tenth. The thorax is transverse, the base sinuate and very finely margined. The posterior tarsi have their basal joint as long as the following two joints together. The metasternal and abdominal lines are distinct, fine, and sinuate. In a specimen, which I think may be the male, there is on the middle of the first ventral segment a small patch of golden pile, quite distinct if viewed from behind. Numerous specimens were obtained by Mr. Champion.

52. **Mycotretus planus.**

Oblongo-ovatus, testaceus, nitidus; antennis nigris, articulis tribus basalibus testaceis; elytris tenue punctato-striatis, interstitiis subtilissime punctulatis; tarsorum articulo tertio fuscescente. Long. 7 millim.

Hab. PANAMA, Bugaba (*Champion*).

Not unlike *M. sobrinus* and about the size of small examples of that species, but of a more sordid yellow colour, and also rather broader and less narrowed towards the apex of the elytra. The punctuation is very fine, yet with a strong lens fine points may be observed on the head and thorax; the latter is broader and less narrowed in front than in *M. sobrinus*. The apical joint of the maxillary palpi is very wide and lunate. The underside is free from any trace of punctuation. Metasternal and abdominal lines distinct, and slightly angulated. Tarsi with the bilobed third joint, and the second joint partly, fuscous. A single specimen.

53. **Mycotretus atricaudatus.** (Tab. IV. fig. 4.)

Oblongo-ovatus, ferrugineus, antennarum articulis sex apicalibus, femoribus, tibiis elytrorumque apice nigris; tibiarum apice summo tarsisque rufis. Long. 5 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

This is a very evenly ovate convex species, elliptical in shape; with the head and thorax very finely and closely punctured. The elytra have seven very fine series of small punctures, and the interstices (when seen under a very strong lens) are minutely punctulate; the black portion of the apex is about one quarter of the length of the elytra, but is continued further up the sides than up the suture. The underside is smooth; the coxæ and trochanters are red, like the body.

The apical joint of the maxillary palpi is strongly widened. One specimen.

54. **Mycotretus melanotus.**

Oblongo-ovatus, rufo-ferrugineus, capite, pronoto, elytrorum apice antennarumque clava nigris. Long. 4 millim.

Hab. PANAMA, La Caldera in Chiriqui (*Champion*).

Head and thorax smooth, but not very shining, owing to their being very thickly,

though very finely, punctate; they are entirely deep black, but the trophi, prosternum, and antennæ (excepting the last four joints) are red. The elytra are brick-red, obsoletely punctate-striate, with rather less than the apical third black; and on each elytron near the base is a trace of a small round obliterated dot. The underside is smooth, the sides of the breast and episterna obsoletely punctate. Legs rusty-red, rather lighter in colour than the body. The maxillary palpi have the apical joint widely dilated. Abdominal lines distinct, traversing the basal segment, the metasternal ones short.

Two specimens.

55. **Mycotretus cercyonoides.**

Oblongo-ovatus, rufus, nitidus; elytris læte sanguineis, margine laterali et apice nigris, leviter punctato-striatis; prothorace nigro vel nigrescente, antice rufescente; antennis articulis quinque apicalibus nigris. Long. 4 millim.

Hab. Panama, David (*Champion*).

Head deep blood-red, clouded with black at the base; palpi, base of the antennæ, and legs also clear red. Thorax black above, with a wedge-shaped spot extending from the front margin to the middle; in one example the whole front is blood-red; its punctuation is sparse but distinct. Elytra red, the entire lateral margin (in two specimens) broadly black, with the apex more broadly so; in two other specimens only the apex is black, the black extending a little up the sides. The maxillary palpi have their terminal joint only moderately widened. This is a very convex species, difficult to place. I think the variation in colour may possibly be a sexual distinction.

56. **Mycotretus brevis.**

Breviter oblongo-ovatus, rufo-ferrugineus, convexus, capite et prothorace crebre fortius punctatis; elytris punctulato-striatis, interstitiis minute punctatis, singulis punctis tribus fuscis, fere obliteratis, uno in callo humerali, uno laterali, uno cum eis triangulum præbente. Long. $3\frac{1}{2}$ millim.

Hab. Panama, Bugaba (*Champion*).

Above bright chestnut-red, almost sanguineous; underneath with the legs and mouth paler. Of a uniform short oval form. Thorax at the base twice as wide as long, with a few indistinct cloudy marks on the disc. The elytra with rather flat interstices; the spots very indistinct, the discal one between the fourth and fifth striæ, the humeral one almost obliterated; the punctures in the striæ not very close. The apical joint of the maxillary palpi is very little more dilated than that of the labial palpi. Abdominal and metasternal lines evident. This little insect is unfortunately unique; it may probably vary in the distinctness of the three spots. It is shorter than any species of *Mycotretus* known to me with the palpi so little dilated, and has much the form of *Tritoma*. The tarsi are faintly fuscescent.

57. **Mycotretus hæmapterus.**

Oblongus, parum ovatus, saturate rufus, capite prothoraceque nigris, ore et subtus rufescentibus, illo crebrius. hoc parce leviterque punctatis; elytris sanguineis ad apicem subinfuscatis, punctato-striatis; antennarum articulis quinque apicalibus nigris. Long. $3\frac{3}{4}$–4 millim.

Hab. PANAMA, Bugaba (*Champion*).—SOUTH AMERICA, Amazons (*Bates*).

Rather narrow; mouth, palpi, base of the antennæ, and legs bright red, and nearly of the same colour as the body beneath. Head and thorax shining black above, reddish beneath, except at the sides the latter is more or less black. Elytra deep but bright blood-red; with small punctures in the series, which are fuscous beneath the epiderm in one specimen. Scutellum red. There is no other similarly-coloured species of *Mycotretus* yet described, except *M. cercyonoides*, which it a little resembles. Two specimens from the Amazons in the Cambridge collection appear to be referable to the same species. The maxillary palpi in our insect are of the moderately widened form; in the Amazons examples they seem to have the apical joint wider, and therefore, though they are identical in colour, it must not be too hastily assumed that they belong to the same species.

Three specimens from Bugaba.

58. **Mycotretus fuscitarsis.** (Tab. III. fig. 25.)

Mycotretus fuscitarsis, Lac. Monogr. Erotyl. p. 180[1].

Hab. MEXICO[1], Toxpam (*Sallé*), Jalapa, Cerro de Plumas (*Höge*); GUATEMALA, Cahabon, Chacoj (*Champion*); COSTA RICA (*Van Patten*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

The short, almost orbiculate, form separates this species and *M. coccineus*, Lac., and *M. sanguinosus*, Crotch, from the other red species. The maxillary palpi have their apical joint very wide. The sides of the metasternum and its episterna are alutaceous and punctured, but rather obsoletely so. The interstices of the striæ of the elytra are thickly but finely punctured. *M. fuscitarsis* varies considerably in size; the largest specimens, which are from Cerro de Plumas, measure six millimetres in length; others from Chacoj and elsewhere are not more than four and a half millimetres. Some specimens seem to have the interstitial punctuation deeper than others. We give a figure of one of the large specimens from Cerro de Plumas.

59. **Mycotretus sanguinosus.**

Mycotretus sanguinosus, Crotch, Cist. Ent. i. p. 458[1].

Hab. COSTA RICA (*Van Patten*); PANAMA, Bugaba (*Champion*), Chiriqui (*Ribbe*).—SOUTH AMERICA, COLOMBIA[1].

Extremely close to *M. fuscitarsis*; although Crotch has placed sixty-four species between them, they both belong to the section with much dilated maxillary palpi.

M. sanguinosus differs from *M. fuscitarsis* by having the tarsi of the same colour as the legs and body, and by the sides of the breast and episterna being impunctate; and also, at least in our specimens, by the antennæ having seven joints red, but one joint before the club being black. The interstices of the elytra are very faintly punctate.

60. **Mycotretus rufipennis.**

Oblongo-ovatus, antice posticeque attenuatus, parum convexus, niger; capite, antennarum basi, prothoracis limbo laterali, elytris, tarsis abdomineque rufis. Long. 5 millim.

Hab. Mexico, Cerro de Plumas (*Höge*).

Rather depressed, very finely punctured; elytra only with obsolete traces of serial punctures, which are more distinct at the sides. Almost exactly resembling *Paratritoma vivida* in colour, but larger and certainly distinct; the antennæ, as usual in *Mycotretus*, with five or six joints at the base yellow; the epistome more produced; and the punctuation of the head and thorax excessively fine, the latter pitchy-black and with the yellow margins shading off into the ground-colour. Legs pitchy-black, with the knees and tips of the tibiæ reddish. The maxillary palpi have the apical joint feebly lunate. Tarsi red, but fuscous above, especially the front pair. Judging by the mentum this is a true *Mycotretus*, but it is difficult to compare with any other; it has a little the appearance of species of the *M. corallipennis* section, from which its feebly developed palpi, punctuation, &c., at once separate it.

A single specimen.

61. **Mycotretus epopterus.** (Tab. IV. fig. 7.)

Oblongus, subparallelus, rufulus; verticis puncto, prothoracis macula transversa, pectore, tibiarum apicibus tarsisque nigris; elytris flavis, punctis duobus basalibus fascia mediana lata, sutura postice apiceque nigris. Long. $5\frac{1}{2}$ millim.

Hab. Mexico, Toxpam (*Sallé*).

Head and thorax very shining; distinctly and rather thickly punctured, but finely (so that the surface is very shining and smooth); their colour and that of the basal five joints of the antennæ and of the legs is a rich pitchy-red, almost blood-red. The disc of the thorax has a transverse and not very regular black mark, united in the middle to the base. The elytra are yellow, with the exception of two spots at the base, one on the callus, and one close to the scutellum, a broad middle fascia, the apex, and the suture behind the fascia; the latter is indented twice on the basal, and once on the apical side. The tips of the tibiæ and the tarsi are black. The form and markings of this insect are very suggestive of *Ischyrus*, but it belongs to the genus *Mycotretus*.

A single specimen.

62. **Mycotretus (?) oppositipunctum.** (Tab. IV. fig. 6.)

Oblongo-ovatus, postice attenuatus, ater; prothorace et capite flavis, crebre ac minute punctatis, hoc inter

antennas fortiter bipunctato, illo punctis duobus nigris, uno in margine antico, altero in medio basali; elytris punctato-striatis; corpore subtus pedibusque piceo-brunneis. Long. $4\frac{1}{2}$ millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Head yellow, finely but closely punctured; mouth pitchy; antennæ black, the basal joints short and stout, the third joint as long as the fourth and fifth joints together; maxillary palpi pitchy, the apical joint moderately wide. Thorax transverse; sides a little arcuate, narrowed to the front angles, which are acute and prominent; basal margin with hardly any marginal line; in the middle of the front margin is a transverse black spot, and one opposite on the basal margin. Elytra shining black, with fine punctured striæ, the sutural stria hardly bent at the scutellum; the latter black. There is only a single specimen of this insect, which has very much the appearance of a *Triplax*, but the club of the antennæ is more like that of *Mycotretus*; it bears some resemblance to *M. peruæ*, Crotch. The mentum is inconspicuous, and the genus is doubtful.

The following species is only known to me from description:—

63. **Mycotretus chontalesi.**

Mycotretus chontalesi, Crotch, Cist. Ent. i. p. 145[1].

"Ovatus, ochraceus, nitidus; antennis sat elongatis, clava nigra, distincte tri-articulata; capite distincte punctato, antice leviter impresso; thorace parce punctulato, lateribus rotundatis, basi utrinque sinuato, leviter foveolato punctatoque; scutello punctulato; elytris albidis, lævibus, punctato-striatis, singulis maculis 2 oblongis parallelis in quartam basalem maculaque communi triangulari (antice paullo producta) nigris. L. c. $2\frac{1}{4}$ lin."

"Allied to *M. lepidus*."

Hab. NICARAGUA, Santo Domingo in Chontales (*Janson*[1]).

The following two species cannot be considered as thoroughly investigated at present, being possibly variable and the material not being sufficient of either:—

64. **Mycotretus nigricollis.**

Breviter oblongus, niger, capite, abdomine, elytris tarsisque rufis; capite prothoraceque minute punctatis; elytris tenuiter punctato-striatis. Long. 5 millim.

Hab. MEXICO, Toxpam (*Sallé*).

Allied to *M. corallipennis*, Crotch; distinct by its rufous head and abdomen and the finer punctuation of its elytra. Both species have the short depressed form of some *Tritomæ*. A single specimen.

65. **Mycotretus badius.**

Breviter ovatus, valde convexus, badius; elytris fortius punctato-striatis, interstitiis minutissime punctatis, basi marginibusque flavo-cinctis; capite prothoraceque minute punctatis, fere lævibus; antennarum clava nigra. Long. 5 millim.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

Perhaps allied to *M. savignyi*, the small form of which from Chiriqui it somewhat resembles.

MYCOMYSTES.

Characteres plerumque sicut in *Mycotreto*, tibiis autem ad apices angulariter dilatatis, generi *Amblyopi* similis videtur. Species adhuc unicus, corpore oblongo, parum ovato, toto pallide flavo vel ferrugineo. Palpi maxillares articulo ultimo perlato, valde transverso. Mentum pentagonicum, sed angulis omnibus ægre discretis, basi angustato. Prosterni processu apice emarginato, antice haud compresso.

The single species for which it is necessary to form a new genus on account of the dilated tibiæ has the general appearance of a large pale rusty-red *Mycotretus*, with which indeed the majority of its characters agree. *Amblyopus* is a genus only inhabiting the eastern tropics, and our insect has no real affinity with it. The angularly widened tibiæ of *Mycomystes* are unlike anything else amongst its true allies, though they are reproduced in the South-American genus *Mycolybas*.

1. **Mycomystes ferrugineus.** (Tab. IV. fig. 8.)

Oblongo-ovatus, pallide ferrugineus, antennarum articulis sex ultimis et mandibularum apicibus nigris; capite prothoraceque creberrime minute punctatis; elytris striatis, interstitiis creberrime perobsolete punctatis; subtus testaceus, metasterni lateribus et episternis subrugose punctulatis, epimeris lævibus. Long. $7\frac{1}{2}$ millim.

Hab. MEXICO, Cerro de Plumas (*Höge*).

About the size and form of *Mycotretus sobrinus*; entirely pale rusty-red, with the exception of the apical half of the antennæ and the tips of the mandibles. The punctuation is very fine and close, except that of the sides of the breast, where large but irregularly shaped punctures are to be found; these irregular punctures have a tendency to form longitudinal rows, and are occasionally confluent. The abdomen is finely punctate. The tibiæ have their inner side a little sinuate, the outer side widened and forming an angle at the end, which is somewhat obliquely truncate (the insertion of the tarsi being quite on the inner side); their upper and under surfaces are flat and slightly pubescent. Both the abdominal and metasternal impressed lines are present. Two specimens.

PARATRITOMA.

Mentum pentagonicum. Palpi maxillares articulo ultimo lunato, valde transverso. Corpus subtus rugose punctatum, pubescens. Prosternum antice haud compressum vel carinatum. Lineæ metasternales et abdominales obscuri vel nulli. Coxæ modice distantes.

I propose this genus to include a number of small species which, on the whole, are very near to the type of *Mycotretus*, but have some of the characteristics of *Tritoma*. The elytra, at least of some of the species (e. g. *P. divisa*), have the short stria near the scutellum, which proves an alliance with the last-named genus. The strongly punctured

surface of the metasternum and its episterna, and especially that of the anterior part of the prosternum, is a character not to be found in the true *Mycotreti*. The legs are slender. The antennæ are long and thin, with a lax three-jointed club; the latter in *Tritoma* is closely articulated and short. The different species are pretty little parti-coloured insects, red and black, and are less convex and less compactly built than the *Tritomæ*. I should include in this genus *Mycotretus triplacoides*, Crotch, and some other species.

1. **Paratritoma dimidiata.**

Oblongo-ovata, nigra, capite, prothorace elytrorumque dimidio basali læte rufis, his punctato-striatis, striis integris; capite prothoraceque creberrime, distincte, prosterno subrugose, pectore parcius, punctatis; elytris circa scutellum interdum nigricantibus; antennis fuscis, articulis duobus basi rufis. Long. 4 millim.

Hab. MEXICO, Cerro de Plumas (*Höge*), Capulalpam, Juquila (*Sallé*).

In this species the head, thorax, and basal half (or rather more) of the elytra are of a fine blood-red; the elytra are sometimes black round the scutellum, sometimes only exhibiting an indistinct blackish stain in that region, or they are wholly red; the scutellum, the underside of the body (the head and prosternum excepted), and the apical part of the elytra are quite black; the legs and antennæ are black with a fuscous tinge, the latter have two joints at the base red and the two following them are obscurely red also; the tarsi are clothed with fuscous pubescence.

2. **Paratritoma divisa.** (Tab. IV. figg. 9, 10, 11.)

Oblongo-ovata, nigra, nitida; elytris (tertia parte apicali excepta) læte sanguineis; capite antice, antennis (clava excepta), pedibus, prothoracis margine laterali, elytrorum epipleuris abdominisque apice, flavis. Long. vix 4 millim.

Hab. MEXICO, Esperanza, Jalapa, Cerro de Plumas (*Höge*), Toxpam (*Sallé*); GUATEMALA, near the city, Capetillo, Zapote (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Less evenly ovate, more attenuated behind, and with the head more exserted than the preceding species. The head and thorax are thickly and distinctly punctured; the prosternum is very thickly but less rugosely punctured than in *P. dimidiata*. The underside of the head is yellowish, except in the middle; the palpi are testaceous. Prosternum not compressed in front, the process wide and only margined at the apex, the marginal line not produced in front of the coxæ. Mesosternum smooth in the middle, but with the sides and episterna coarsely punctate. Abdomen very obsoletely punctured, infuscate at the base, but becoming indeterminately testaceous towards the apex. Legs rather long, yellowish-red, with the exception that the coxæ are black. Elytra punctate-striate; there is a short scutellar stria (more distinct in this species than in *P. dimidiata*), this being quite separate from the sutural stria. Antennæ rather long, fully as long as the head and thorax; the last three joints only are black, the base yellow, the intermediate joints becoming obscurely yellow. *P. divisa* varies a

good deal in colour and somewhat in size. The elytra in some specimens are more or less infuscate at the base; in others the base is quite black, but narrowly so, and the red portion is then much narrower on the margin than in the middle and forms a saddle-shaped fascia. The lateral margins of the thorax in some examples are widely yellow; but in others they are only narrowly so, except at the front angles. We have received many specimens.

3. **Paratritoma caduca.** (Tab. IV. fig. 12.)

Oblongo-ovata, flava; capitis vertice, prothoracis macula discoidali transversa, antennarum clava et corpore subtus ex parte nigro-piceis, elytris nigris ante medium flavo-fasciatis; capite prothoraceque crebre sat fortiter punctatis. Long. $2\frac{1}{2}$–3 millim.

Hab. GUATEMALA, Capetillo, Cerro Zunil (*Champion*).

This species differs from *P. divisa* in colour: the head, thorax, and fascia of the elytra are orange-yellow (instead of blood-red), and the underside is more variegated with the yellow colour. The thorax is yellow, with a central mark which is often divided by a yellow line and has a lateral spot-like projection on each side; this mark touches the front margin, but though it varies and is sometimes reduced to a mere shade I have not seen any specimen in which it reaches the other margins. *P. caduca* is very nearly allied to *P. divisa*, but is smaller and narrower and more feebly built. Five specimens, four of which are from Capetillo.

4. **Paratritoma vivida.**

Oblongo-ovata, nigra; capite, prothoracis angulis anticis, antennarum articulis duobus basalibus et abdomine aurantiacis; elytris sanguineis, profunde punctato-striatis. Long. $3\frac{1}{2}$ millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*).

The elytra in this species are entirely blood-red, with the punctures in the striæ larger and less numerous than in *P. divisa*. The head is red, but much clouded with black. The thorax is black, with the front and lateral margins narrowly, and the front angles widely, yellow; its disc is deeply but rather sparingly punctured. The scutellum, underside (excepting the abdomen), and legs are black.

A single specimen.

MYCOPHTHORUS.

Mycophtorus, Lacordaire, Monogr. Erotyl. p. 198 (1842).
Mycophthorus, Crotch, Cist. Ent. i. p. 470 (1876).

The difference between this genus and *Mycotretus* is very slight; it consists chiefly in the antennæ having short bead-shaped joints, the third being very little elongate, and the club short, round, and with its joints connate. The general texture is as in *Lybas*, lucid and with a varnished, shining appearance, at least in the species which I identify with *M. pauperculus*.

1. **Mycophthorus pauperculus.** (Tab. IV. fig. 13.)

Mycophtorus pauperculus, Lac. Monogr. Erotyl. p. 194[1].
Mycophthorus pauperculus, Crotch, Cist. Ent. i. p. 471[2].

Hab. British Honduras, Belize, R. Sarstoon (*Blancaneaux*); Guatemala, Teleman (*Champion*); Panama.—South America, Colombia [1 2], Amazons [2].

Oblong, slightly ovate, a little contracted at the shoulders; head and thorax very smooth and shining, the former with a wide oblique fovea on each side of the front near the insertion of the antennæ, and an impressed stripe above the eyes. Thorax very short, twice as wide as long, with prominent but depressed rather acute front angles; base sinuous, the middle lobe scarcely produced and leaving most of the scutellum free, hardly margined, but with a row of punctures which are conspicuous on each side of the median lobe. Elytra punctate-striate, and with fuscous marks under the punctures; the fifth stria more deeply impressed at the base and with seven or eight larger and deeper punctures there. Antennæ very short and stout, with five or six joints at the base red and the remainder fuscous; the three club-joints are very short and transverse, the short apical one being reddish. This insect perfectly agrees with Lacordaire's description and with a specimen in Crotch's collection from that of Reiche. There are three specimens from Teleman and one from each of the other localities.

PSEUDOLYBAS.

Corpus breviter ovatum, subscaphiforme, pernitidum, quasi vernicatum. Antennæ mediocriter longæ, articulis tribus ultimis transversis, clavam elongatam formantibus. Palpi maxillares articulo ultimo securiformi, modice lato. Mentum pentagonicum, sicut in *Mycotreto*. Prosternum antice valde compressum. Lineæ metasternales aut abdominales nulli. Pedes longi, tibiis haud expansis, leviter curvati, tarsis articulo basali duobus sequentibus longiore.

I propose this new genus for two species of moderate size, both from the State of Panama. The type is very like *Lybas carbunculus*. The singular varnished smooth surface here reaches its maximum, there being no trace of striæ or punctures on the elytra of *Pseudolybas glaber*.

1. **Pseudolybas glaber.** (Tab. IV. fig. 14.)

Breviter ovatus, antice posticeque angustatus, saturate rufo-ferrugineus, glaber, pernitidus; antennis nigris, articulis quatuor primis rufis. Long. 5–5½ millim.

Hab. Panama, Bugaba, David (*Champion*).

Very similar at first sight to *Lybas carbunculus*, but rather smaller and shorter. The head is quite smooth, with an oblique fossa on each side of the front; eyes prominent, finely faceted. Antennæ of usual length, but a little shorter than those of *L. carbunculus*; the fourth to the seventh joints are especially shorter and scarcely longer than wide; the eighth joint is transverse and a little widened; the three club-joints are transverse, not acute within (as in *Lybas*), nor with their apical edges curved. The thorax at the base is as wide as the elytra; the sides are nearly straight and

narrow very considerably to the front angles; the anterior margin is excavated a little more deeply than in *L. carbunculus*; the basal margin is a little less deeply sinuate, the middle lobe faintly truncate and not at all covering the scutellum, and on each side of it are a very few punctures on the extreme base. Elytra convex, and, with the exception of a fine sutural stria, unsculptured; the latter is entire. Underside smooth and shining. Legs rather long; tibiæ a very little curved, as in *L. carbunculus*.

There are two specimens from Bugaba; the one from David is smaller and of a lighter colour, with the obsolete punctures indicated by fuscous dots in series, and may possibly not be specifically identical, a point impossible to be determined from a few specimens.

2. **Pseudolybas vernicatus.**

Oblongus, minus ovatus, depressiusculus, pernitidus, læte castaneus, glaber. Antennis nigris, articulis quatuor primis rufis; elytris interdum punctis obsoletis; subtus fuscis. Long. $4\frac{1}{2}$–5 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This species is very close to *P. glaber* and only differs from it as follows:—It is of a less evenly ovate form; the thorax appears more depressed at the base; the elytra are not so convex and have the humeral callus rather more evident; the antennæ are thinner, the club especially being more lax and not so broad; and the whole insect is lighter in colour, and the fuscous punctures beneath the glazed surface are very evident.

LYBAS.

Lybas, Lacordaire, Monogr. Erotyl. p. 228 (1842) (Dej. Cat., Chevr.).

Lybas, after the species separated by Crotch as *Mycolybas* have been eliminated, is a genus of small extent and contains less than twenty species; it is confined to Central and South America and extends as far south as the Amazons. The majority of the species are blood-red in colour, and have a very polished surface; some of the South-American forms have black elytra, and some have the thorax variegated. They are, however, not usually so much ornamented with pattern as the *Mycotreti*. *Lybas* is separated from *Mycotretus* by the mentum being acutely lanceolate in the middle, and by the smooth surface, the more convex and gibbous form, and the more compressed prosternum. The production of the middle of the base of the thorax into a lobe which covers part of the scutellum is distinct in the larger species; but it must be confessed that the assignment of many of the small species to this genus is a matter at present of much uncertainty.

1. **Lybas granatus.** (Tab. IV. fig. 15.)

Lybas granatus, Lac. Monogr. Erotyl. p. 231[1].

Hab. Mexico [1], Oaxaca (*Sallé*), Tabasco [1], Yucatan [1].

Apparently very rare; I have only seen two specimens, one in Sallé's collection, the other in that of Crotch. The punctures in the elytral striæ are for the most part only indicated by fuscous dots in eight series, the series being continued to the apex; it is only at the base and in a few instances that they are impressed, the surface of the elytra being quite even. The figure is taken from the specimen from Oaxaca.

2. **Lybas carbunculus.** (Tab. IV. fig. 16.)

Lybas carbunculus, Lac. Monogr. Erotyl. p. 238[1].

Hab. MEXICO, Toxpam (*Sallé*), Tabasco[1], Yucatan[1]; GUATEMALA, Senahu in Vera Paz (*Champion*); PANAMA, Bugaba (*Champion*).

Var.? Major (7 millim.), minus læte sanguineus, prothorace utrinque punctis duobus magnis impressis.

Hab. GUATEMALA, Zapote (*Champion*).

A species usually distinguished by its medium size (vix 6 millim.), dark blood-red colour, and very shining varnished appearance. The sides of the metasternum have a few obsolete largish punctures, the rest of the underside being smooth. Metasternal and abdominal, plicate, raised lines are present. The antennæ are black, with two (in the Mexican) or three (in the Guatemalan specimens) joints red at the base. In the larger specimen from Zapote I see very little difference, except that two joints at the base of the antennæ are red, and that the general colour is lighter and less lucid.

3. **Lybas interpunctatus.**

Breviter ovatus, læte castaneus, lucidus; antennis nigris, articulis tribus basi rufis; elytris punctato-striatis, punctis haud magnis, interstitiis crebre et distincte punctulatis. Long. $6\frac{1}{2}$ millim.

Hab. MEXICO, Cerro de Plumas (*Höge*).

Closely allied to *L. carbunculus*, from which it differs in its slightly larger size, rather broader form, and, especially, in the elytra being (under a strong lens) evidently punctured all over, the fine punctures being placed longitudinally between the serial ones as well as in the interstices. The head and thorax are very shining, but are punctate though extremely finely so. The serial punctures on the elytra are small and obsolete superficially, but distinct as fuscous spots under the surface. The underside is very smooth and shining, with only a few obsolete but large flat punctures on the sides of the metasternum. This species and its allies have frequently two or more quite symmetrical impressions upon the thorax; but the impressions are not constant and of no use for characters—thus, one specimen of *L. interpunctatus* exhibits two oblique depressions near the centre of the thorax, while the other is quite free from them.

4. **Lybas anisotomoides.**

Concinne ovatus, convexus, pernitidus, saturate rufo-brunneus; antennis nigris, articulis tribus basi rufis; elytris punctulato-striatis. Long. 5 millim.

Hab. PANAMA, Volcan de Chiriqui, Tolé (*Champion*).

Smaller and relatively shorter than *L. carbunculus*, and with fewer punctures in the series, the punctures being at the same time larger and more deeply impressed near the base of the elytra.

Two specimens only.

LYBANODES.

Corpus ovatum, subscaphiforme, nitidum, lucidum. Antennæ ut in *Lybas*, articulis tribus ultimis clavam perfoliatum formantibus, articulo nono et decimo angulis anterioribus acutis intus paullo productis; palpi maxillares articulo ultimo quadrato, haud lato. Mentum acutum, subtrianguliforme. Prosternum antice compressum. Lineæ metasternales et abdominales distinctæ. Sexus masculinus puncto ventrali piloso, in medio segmenti primi distinctus. Pedes modice longi; tibiis haud expansis, fere rectis; tarsis articulis tribus primis subæqualibus.

The small insect I include in this genus is very like *Lybas anisotomoides* superficially, but it cannot be included in either of the allied genera on account of the undilated maxillary palpi. The sexual distinction so rare in this family, and hitherto not observed in the 'Triplacides,' is an additional reason for its separation.

1. **Lybanodes castaneus.** (Tab. IV. fig. 17.)

Oblongo-ovatus, postice parum attenuatus, saturate castaneus vel brunneus; antennis articulis quinque basalibus et palpis testaceis, clava nigra articulo ultimo rufo; elytris punctulato-striatis. Long. $4\frac{1}{2}$–5 millim.

Mas segmento ventrali primo puncto aureo-piloso.

Hab. NICARAGUA, Chontales (*Janson*).

Very smooth and shining, deep chestnut-red; the head with a few minute punctures, especially at the base; the antennæ, palpi, and legs rather lighter red than the body. Thorax narrowed in front, the front margin nearly straight, the sides very finely margined; basal margin with an obsolete row of punctures, but no true marginal line; its disc convex and glabrous. Elytra very convex, more narrowed towards the apex than the body is in front; with rows of large punctures, the row before the humeral callus being more deeply impressed at the base than the others, and all of them becoming obliterated before the apex; there is no sutural stria, and the surface is quite smooth between the rows of large punctures. The underside is smooth, but near the plicate lines on the metasternum are several very large rough punctures; the whole body beneath is very much keeled; the intercoxal process of the abdomen is long, and (in the male) the pilose spot, which is not impressed but only clothed with fine depressed golden hair, is placed rather below the coxæ near the base of the segment.

Three specimens of this interesting species have been received, of which two are males.

TRIPLAX.

Triplax, Herbst, Natursyst. Insekten, Käfer, v. p. 146 (1793); Paykull, Fauna Suec. iii. p. 346 (1800); Lacordaire, Monogr. Erotyl. p. 202 (pars) (1842); Bedel, L'Abeille, v. p. 19 (1868); Crotch, Cist. Ent. i. p. 463 (pars) (1876).

Triplax is a Palæarctic and Nearctic genus containing between twenty and thirty species which are almost evenly distributed in the Old and New Worlds. The genus is distinguished by the rather elongate form, trigonal mentum, widely expanded apical joint of the maxillary palpus, and by the colour—usually yellow, with black elytra unrelieved by pattern. In certain species the body beneath is black, and a few have the colour of the elytra divided. To include in it, as Lacordaire has done (and Crotch follows him), the four Madagascar species is to nullify all the conclusions to be drawn from distribution, for these species differ in almost every particular by which *Triplax* is generically distinct. The Indian and the Japanese representives are quite typical.

1. **Triplax högei.**

Oblongo-ovata, sat lata, pallide luteo-flava, elytris et scutello ex parte nigris, antennarum clava fusca, capite et prothorace corporeque subtus crebre sat fortiter punctatis. Long. 4½ millim.

Hab. Mexico, Cerro de Plumas (*Höge*).

This insect comes nearest to the form of *T. thoracica* with the scutellum yellow, and which is itself very close to, but not identical with, *T. scutellaris*, Charpentier. It is, however, smaller and shorter, the punctuation of the head and thorax is closer, and the interstices of the elytra are smooth. This species and the one described by Crotch as *T. thoracica* appear to be distinct from *T. melanoptera*, Lec., the few specimens of which I have seen having the scutellum entirely black and the elytra quite distinctly though very sparsely punctate between the striæ.

About a dozen specimens.

2. **Triplax championi.** (Tab. IV. fig. 18.)

Breviter oblongo-ovata, flava, elytris, metasterno coxisque posticis nigris, antennarum clava fusca. Long. 4 millim.

Hab. Mexico, Cerro de Plumas (*Höge*); Guatemala, San Gerónimo (*Champion*).

Rather smaller than *T. flavicollis*, Lac.; the head and thorax closely and minutely punctured. Antennæ clear red, excepting the three club-joints and the eighth joint; the latter is sometimes partially fuscous. Elytra with the striæ closely punctured, the interstices a little convex and smooth. Scutellum black. Underside red, with the exception of the metasternum alone (the coxæ and mesosternum being red), rather coarsely punctured; the abdomen smooth but slightly pilose; the sides of the metasternum with large coarse punctures, less close than those of the episterna.

This pretty little *Triplax* may be at once known from *T. flavicollis* and from any other species of the genus by the metasternum alone of the underside being black. In one or two examples from Cerro de Plumas the abdomen appears to be very dark, almost black; but as others from the same place do not differ from the type I think this is due to discoloration.

3. **Triplax mesomelas.**

Brevior, oblongo-ovata, flava, elytris et metasterno nigris, antennarum clava fusca. Long. $3\frac{1}{2}$–4 millim.
Var. metasterno medio rufo.

Hab. British Honduras, Belize (*Blancaneaux*); Panama, Bugaba (*Champion*).

This species comes very close to *T. championi*, but is distinct. The following are the points of difference:—It is on the average smaller, shorter, and more uniformly ovate; the puncturing of the prosternum and of the sides of the metasternum is much less coarse and not so confluent; the metasternum is very often red, but infuscate at the sides and with black episterna; the hinder coxæ seem always to be red (in *T. championi* they are black); and the puncturing of the head and thorax is finer.

4. **Triplax rediviva.** (*T. redivivus*, Tab. IV. fig. 19.)

Oblonga, nitida, nigra, capite, prothorace, mesosterno, antennis pedibusque sanguineis. Long. 4 millim.

Hab. Guatemala, Quiche mountains 8000 feet (*Champion*).

Head and thorax blood-red; thickly and rather strongly punctured, the latter more sparsely so than the head. Antennæ entirely red, as are also the mesosternum and legs. The elytra are deeply punctate-striate, the interstices smooth and not very flat. Scutellum black. Underneath, the prosternum is punctured and somewhat rugose; the metasternum and abdomen are black, the former with scattered large punctures, the latter distinctly but finely and closely punctured and very indistinctly pubescent.

One specimen obtained by Mr. Champion in the pine-forest region. The only other species of *Triplax* known to me that has wholly red antennæ is the European *T. lepida*, from which, *inter alia*, this differs by its coarser striation and punctuation.

TRITOMA.

Tritoma, Fabricius, Syst. Ent. p. 68 (1775); Mant. Ins. p. 44 (1787); Ent. Syst. i. p. 505 (1792); Panzer, Naturf. Stück 24, p. 12, t. 1. fig. 17 (1789); Paykull, Faun. Suec. iii. p. 346 (1800); Gyllenhal, Ins. Suec. i. p. 208 (1808); Redtenbacher, Faun. Austr. ed. iii. p. 408 (1872); Lacordaire, Monogr. Erotyl. p. 218 (1842); Thomson, Skand. Col. v. p. 296 (1863); Bedel, L'Abeille, v. p. 40 (1868).
Cyrtotriplax, Crotch, Ent. Monthly Mag. ix. p. 189 (1873); Trans. Am. Ent. Soc. 1873, p. 355.

Tritoma, like *Triplax*, is essentially a Palæarctic and Nearctic genus, predominating in the latter region. Recently Mr. G. Lewis has enumerated seventeen species from

the Japanese islands alone; in Western Europe there is only one, the well-known type of the genus, *T. bipustulata*, while America North of Mexico possesses about seven typical species.

The greatest difficulty exists in satisfactorily defining the genus, as very similar insects are found in the Oriental region. These latter, however, are obviously not typical. Throughout the Erotylidæ, and especially in the 'Triplacides,' very minute differences must be taken as of generic importance; and if *Tritoma* is treated with the same precision that the preceding genera have received, we must exclude various species from Borneo, Ceylon, and other Tropical countries which have been referred to it.

Tritoma is allied to *Triplax* by the shape of the raised part of the mentum, which is, roughly speaking, trigonal; it differs from it in its shorter form, being narrowed at both ends, and by the consequently much shorter prosternum; the latter is compressed in front, thus causing its submarginal lines to converge in most species. In *T. bipustulata* these lines terminate with a small inflexion, but in some species, as *T. niponensis*, Lewis, the prosternal process forms a raised delta-shaped plateau. The club of the antennæ is short, with the three terminal joints connate, not perfoliate as in *Triplax*. The tibiæ are angularly widened, their apices being obliquely cut.

M. Louis Bedel has, in his monograph of the Old-World species (L'Abeille, v. pp. 1–50), given an exposition of the characters of both this genus and of *Triplax*, which leaves little to be desired but the synthesis of the New-World species and of the numerous others which have been added from Japan. With regard to the adoption of the name *Tritoma* for this genus, I have given my view of the prescriptive right which I think the consensus of naturalists for more than one hundred years has established [*cf.* Notes from the Leyden Museum, vii. p. 257, note]. Its application to the genus known to us as *Mycetophagus* is not justified by Geoffroy's use of it, in a sense which was founded on an error, the name of course having reference to the three-jointed club of the antennæ.

1. **Tritoma dorsalis.** (Tab. IV. fig. 20.)

Breviter ovata, nigra, nitida; ore, antennis (clava excepta), tibiis tarsisque luteis; elytris punctato-striatis, macula magna communi, extus attenuata interdum marginem attingente; capite prothoraceque minutissime parce punctatis, fere glabris. Long. $2\frac{3}{4}$ millim.

Hab. PANAMA, Bugaba (*Champion*).

This pretty little *Tritoma* is the smallest of its genus known to me and is also the only one I have seen from a locality so far south or from within the tropics. It is almost evenly oval, not more narrowed behind than in front; the head and thorax are smooth and shining; the latter is rather convex (under a $\frac{1}{4}$-inch glass, covered with small punctures), the base sinuate, the middle lobe fairly produced, the sides finely margined, the basal edge plain. Elytra punctate-striate, the strial punctures distinct, numerous, and small. Antennæ about the length of the thorax, finely

built, testaceous (excepting the well-defined short club, which is fuscous), their third joint rather longer than the two following. Mouth and palpi testaceous. Legs rather slight and long for this genus, their tibiæ less widened than usual, the tarsi long; only the femora are dark, the rest being of the same yellow colour as the antennæ. Underside smooth, black, excepting the abdomen, which is pitchy-red; the prosternum is broad, its raised portion forming an equilateral triangle, the side-lines appearing to meet in front. The middle coxæ are a little more distant from each other than the front or posterior pair.

Three specimens.

HÆMATOCHITON.

Corpus oblongum, modice convexum. Antennæ longitudine capitis prothoracisque conjuncti, articulo tertio elongato duobus sequentibus æquali. Palpi maxillares articulo ultimo triangulari, labiales, apice truncato subovato. Pedes mediocres; tarsi articulis tribus primis subæqualibus, posticis articulo basali paullo elongato. Mentum antice acutum, oblongo-quadratum. Oculi tenuiter reticulati. Lineæ metasternales vel ventrales nullæ.

The very singular-looking species from Mexico, for which I propose this new genus, has somewhat the appearance of a *Mycotretus*; but the more depressed form, the feebly developed apical joint of the maxillary palpi, the total absence of coxal lines beneath, the deep and rather coarse puncturing of the head and thorax, the scarlet elytra, and their firmer texture all point to the conclusion that this insect must represent a different genus.

1. **Hæmatochiton elateroides.** (Tab. V. fig. 4.)

Oblongus, parum convexus, nigerrimus, nitidus; capite prothoraceque profunde crebre punctatis; elytris læte sanguineis, punctato-striatis. Long. 6 millim.

Hab. Mexico, Ciudad in Durango 8100 feet (*Höge*, *Forrer*).

Black; the elytra blood-red (similar to those of *Elater lythropterus* &c.), but with their extreme tips black. The antennæ are rather short; the club three-jointed, the eighth joint transverse and but very little wider than those preceding it. Head with the epistome but little produced, and not distinct; very even, a little depressed between the eyes, thickly and distinctly punctured. Thorax transverse; margined very neatly in front and at the sides, but scarcely so at the base; the surface very even, and with oblong, deep, flat-bottomed punctures; the anterior angles acute, but not very prominent; the sides narrowing slightly in front. Scutellum black. Elytra somewhat opaque, but still shining; with eight series of punctures in finely impressed series—the first or sutural one disappears in the suture about the middle, the rest are continued nearly to the apex, but gradually disappear, the eighth being almost obsolete. Legs rather long, but not especially so; femora a little compressed, not much thickened, keeled on their posterior edges. Underside smooth. Prosternum not compressed.

This insect has very much the appearance of a small but short red *Elater*. It has

very much perplexed me as to its true position, the characters being all very negative or generalized. Four specimens were captured by Höge and one by Forrer.

SCÆOTHER.

Characteres plerumque sicut *Hæmatochitone*. Corpus oblongum, supra omnino crebre, infra obsoletius punctatum. Antennæ breviusculæ, validæ. Palpi labiales articulo ultimo subquadrato. Lineæ abdominales distinctæ. Metasternum punctatum. Abdomen pedesque parce pruinosi. Femora compressa, tibiæ leviter sinuatæ, extus et intus carinatæ.

1. **Scæother carbonarius.** (Tab. V. fig. 5.)

Oblongus, parum convexus, opacus vix nitidus, niger; capite prothoraceque creberrime sat fortiter punctatis, hoc transverso, convexo, angulis anticis depressis, acutis, tenuissime marginatis; elytris obsolete crebre minute punctatis, leviter punctato-striatis. Long. 5 millim.

Hab. MEXICO, Toluca (*Höge*).

A very obscure-looking insect, which from its opaque punctured surface and black colour might easily be taken for a Tenebrionid.

In structural characters *S. carbonarius* seems to agree very nearly with the insect described above as *Hæmatochiton elateroides*; but the presence of abdominal lines, the more robust build, and the more convex pronotum, in addition to the very different sculpture, are sufficient indications of its being generically distinct from *Hæmatochiton*. In the single specimen found by Höge the prothorax is very obsoletely keeled in the middle, but so faintly as only to be noticed by turning the insect about. The scutellum is thickly punctulate like the rest of the upper surface. The tibiæ are very slightly enlarged towards the apex. The base of the thorax is sinuate, with an ill-defined fossa on each side of the median lobe, and a few larger punctures along the margin at that part; the middle of the front cannot be termed "margined," but is deflexed.

Subfam. *EROTYLIDES.*

The genera which are grouped in this subfamily are not so homogeneous as those of the preceding group; but they agree in having the inner lobe of the maxillæ bidentate, that is to say, with two stout hooks near their apex. With the exception of one genus, viz. *Aulacochilus*, they are all peculiar to the New World. The more typical genera (e. g. *Erotylus*, *Zonarius*, *Homoiotelus*) have long legs and antennæ, and the elytra are frequently elevated in a pyramidal manner or even produced into a spine.

1. *Eyes coarsely faceted.*

SCAPHENGIS.

Corpus oblongum, postice ovatum et gibbosum. Oculi fortiter granulati. Antennæ longæ, leviter pubescentes, articulo tertio quam quartus vix longiore, articulis tertio ad octavum fusiformibus, clava laxe articulata. Palpi maxillares articulo ultimo leviter securiformi. Epistomate punctato. Pronotum subquadratum, antice recte truncatum, angulis anterioribus parum prominentibus, basi immarginata, tenuiter plicata.

Elytra gibbosa, epipleuris latis, ad apicem attenuatis, leviter plicatis. Prosternum obsolete rugoso-punctatum; processu longo, subparallelo, apice rotundato. Lineæ metasternales et abdominales obsoletæ. Pedes modice longi, tarsis haud multo elongatis.

This new genus is necessary for a small but very interesting Mexican insect. It is allied to the Colombian *Euphanistes*, one of the most anomalous genera of the Erotylidæ; *Scaphengis* differs from it, however, in form, being broader in front. The antennæ are differently constructed—in *Euphanistes* the joints succeeding the third are long, and the third itself is particularly long; in *Scaphengis* the corresponding joints are subequal and fusiform. Other differences of hardly less importance are noticed in the diagnosis. This singular genus is one of M. Sallé's discoveries, I have not seen anything else like it in any collection.

1. **Scaphengis picipes.** (Tab. V. fig. 6.)

Oblongus, convexus, gibbosus, postice ovato-attenuatus, niger, nitidus, fere glaber; antennis, palpis pedibusque rufo-piceis; prothoracis lateribus anguste marginatis, basi punctato-plicata; elytris sutura ad basin depressa. Long. 5–6 millim.

Hab. Mexico, Toxpam (*Sallé*).

Eyes small, but very coarsely granulate; epistome thickly punctured; antennæ long, but not much longer than the head and thorax; the latter is subquadrate, the breadth being rather greater than the length, the sides are parallel for about the basal half, and the hind angles are nearly rectangular; the base of the elytra is a little excised on each side near the humeri to receive the thorax, which is closely applied to them, but the humeri themselves are acute. The thorax and the elytra are quite smooth and glabrous, with the exception of the few punctures or plicæ on the extreme basal edge on each side of the middle. The underside is rather strongly scaphiform; on the prosternum and in some other parts there are a few obsolete but largish punctures; and bordering the hind coxæ a row of punctures are to be seen which probably represents the edge of the coxal "plaque abdominal" and abdominal lines, which are otherwise quite absent. The whole of the hind-body is rather uneven, from a very obsolete coarse punctuation, and is very faintly pubescent.

This insect has very much the appearance of some small forms of Tenebrionidæ.

Three specimens.

2. *Eyes finely faceted.*

COCCIMORPHUS.

Coccimorphus, Hope, Rev. Zool. 1841, p. 114; Lacordaire, Monogr. Erotyl. p. 266 (1842); Chapuis, Gen. Col. xii. p. 54 (1876).

Strongylosomus, Chevrolat, Dej. Cat. 3rd edit. p. 451 (1837); Crotch, Cist. Ent. i. p. 487 (1876).

Coccimorphus is a genus of about fourteen species which are almost confined to Tropical South America, but with a few representatives in Central America. It is only

separable from *Ægithus* by very slight differences of form. The metathoracic lines, which are very conspicuous in *Ægithus*, are here absent or almost obsolete.

A. *Epistoma squarish, much punctured, separated by a slightly arcuate line.*
(Coccimorphus, *Hope*.)

1. **Coccimorphus emys.** (Tab. IV. fig. 21.)

Coccimorphus emys, Lac. Monogr. Erotyl. p. 518[1].

Hab. MEXICO, Oaxaca[1], Mirador (*Sallé*), Jalapa, Almolonga (*Flohr*); GUATEMALA, Aceituno (*Salvin*), San Gerónimo, San Joaquin (*Champion*).

2. **Coccimorphus frenatus.**

Ægythus (*Coccimorphus*) *frenatus*, Guérin-Ménev. Rev. Zool. 1841, p. 120[1].
Coccimorphus frenatus, Lac. Monogr. Erotyl. p. 271[2].
Strongylosomus frenatus, Crotch, Cist. Ent. i. p. 488[3].

Hab. NICARAGUA, Chontales (*Belt*).—SOUTH AMERICA, Colombia[1 2 3].

A single specimen from Nicaragua. Not recorded previously from the northern continent.

B. *Epistoma cuneiform, smooth, separated by a strongly arcuate line.*
(Strongylosomus, *Chevr*.)

3. **Coccimorphus dichrous.**

Erotylus unicolor, var., Oliv. Ent. v. p. 481[1]; Latr. in Humboldt et Bonpland, Obs. Zool. i. p. 184, t. 17. f. 7[2] (?); Duponch. Monogr. Erotyl. p. 37, t. 3. f. 72 (?)[3].
Coccimorphus dichrous, Lac. Monogr. Erotyl. p. 274[4].
Strongylosomus dichrous, Crotch, Cist. Ent. i. p. 489[5].

Hab. ?GUATEMALA[5]; COSTA RICA[5], Cache (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, David, Tolé (*Champion*).—COLOMBIA[1 3], Bogota[5], Rio Magdalena[4]; ECUADOR (*Buckley*); VENEZUELA (*coll. Crotch*).

The older authors considered this insect to be a mere variety of *C. unicolor*, a species which occurs further south; but it is probable that they confounded with it others of similar appearance. The references to Latreille and to Duponchel are given, as those authors probably refer to this species in the text, though their figures do not apply to it—that in Humboldt's work probably represents a *Coccimorphus*, but one more like *C. emys*, and the Mexican locality, "Nouvelle Espagne, Jorullo"[2], pointing also probably to that species. Crotch gives "Guatemala;" there is, however, no specimen from that country in his collection.

ÆGITHUS.

Ægithus, Fabricius, Syst. Eleuth. ii. p. 9 (1801); Lacordaire, Monogr. Erotyl. p. 276 (1842); Chapuis, Gen. Col. xii. p. 55 (1876).

A Tropical-American genus of more than forty species, which are distinguished generally by their nearly hemispherical form, and red or yellow colour, rarely spotted elytra, but frequently black head, thorax, or body. As might be expected, *Ægithus* is more numerous in species south of the Isthmus of Panama.

A. *Elytra smooth, not striate.*

1. **Ægithus melaspis.** (Tab. IV. fig. 22.)

Coccimorphus melaspis, Chevr. (Sallé coll.) ined.

Late ovatus, saturate rufus, supra opacus subtus nitescens; antennis (articulis duobus primis exceptis), tibiis, tarsis et scutello nigris. Long. 10–12 millim.

Mas segmento ventrali primo puncto minute setigero.

Hab. Mexico (*Sallé, ex coll. Sturm*), Presidio (*Forrer*), Orizaba, Tehuantepec (*Sallé*), Chilpancingo in Guerrero (*Höge*); Guatemala, San Gerónimo (*Champion*); Nicaragua, Chontales (*Janson*).

This species is more elongate and less convex than any other of the genus known to me, and hence has more the appearance of a *Coccimorphus*. It is elongate-ovate in shape, acuminate before and behind, moderately convex, of a uniform dull brick-red colour, smooth, and a little shining beneath, and without punctuation, excepting only that the epistome has a few very small indistinct points. The antennæ are black, with two joints at the base red, their third joint elongate; the club is composed of four joints, and is rather narrow, the eighth, or first club-joint, not so long as the ninth, and this one longer than the two succeeding it. The margin of the antennal socket bears a single puncture (present also in *Coccimorphus dichrous* and some other *Ægithi*); the tips of the mandibles are black. The scutellum, tips of the femora, tibiæ, and tarsi are black. There are no metasternal nor abdominal lines. Prosternum even, rather raised in the middle, but not compressed, nor acuminate in front. The punctiform setigerous dot on the middle of the first ventral segment in the male is a character unusual in this genus, but occurs in *Erotylus*, and rarely in other genera (as we have seen in *Mycotretus*); and what is more noteworthy still is that there is a similar but less conspicuous dot on the middle of the prosternal process in this species. We have received a large series of this insect. It was found abundantly by Mr. Champion at San Gerónimo. There is one specimen unnamed in the Cambridge collection.

I have retained the name with which it is labelled in Sallé's collection.

2. Ægithus cardinalis. (Tab. IV. fig. 23.)

Ægithus cardinalis, Chevr. Col. Mex. Cent. i. fasc. 4, no. 5 (1834)[1]; Lac. Monogr. Erotyl. p. 284[2]; Crotch, Cist. Ent. i. pp. 146, 492.

Hab. MEXICO, Orizaba[1], Toxpam, Teapa, Parada, Jalapa (*Höge*); GUATEMALA, Cubilguitz, Sabo, Tactic, Totonicapam (*Champion*).

Var. Minor (long. 9–10 millim.), testaceus.

Hab. MEXICO, Jalapa (*Höge*).

I cannot agree with Crotch in thinking that *Æ. rufipennis*, Chevr., and *Æ. meridionalis*, Crotch, can possibly be forms of *Æ. cardinalis*: they are accordingly here kept distinct; a third species, which has been confounded with *Æ. cardinalis*, is described below, as there are abundant distinctions, and they occur in different districts.

Mr. Champion's capture of *Æ. cardinalis* in Guatemala is an interesting discovery. There are no specimens other than Mexican in Crotch's collection or my own. The small variety found by Höge at Jalapa is peculiar on account of its uniformly small size: there were about a dozen specimens all alike. Mere colour variety, such as the var. A, noticed by Lacordaire, is of no importance, and occurs in all the red and dark yellow species of Erotylidæ.

Of this insect we have a large series of specimens.

The prosternum is somewhat compressed in the middle, but is not acuminate in front; the antennal orbit has its margin flattened above, with a small oblong puncture and striola joining the ocular canthus.

3. Ægithus politus.

Oblongo-ovatus, antice posticeque acuminatus, elytris valde convexis, subcordiformibus, gibbosis; niger, nitidissimus; capite, prothorace elytrisque rufo-flavis, glabris. Long. 12–13 millim.

Hab. NICARAGUA, Chontales (*Janson*, *Belt*); COSTA RICA (*Van Patten*); PANAMA, Bugaba (*Champion*), Volcan de Chiriqui (*Ribbe*).

Of the same form as *Æ. cardinalis*, but more convex; the elytra more produced and more depressed towards their apex, and hence more gibbous when viewed laterally. Although this species so far resembles *Æ. cardinalis* as easily to be confused with it, it may readily be distinguished by the total absence of any black discoidal mark on the thorax. It also differs structurally, the prosternum being produced into an acuminate point in the middle of its front margin. In colour *Æ. politus* is usually of a more yellow- than blood-red; and the elytra, perhaps from their greater convexity, have a more polished look than those of either *Æ. cardinalis* or *Æ. meridionalis*.

4. **Ægithus rufipennis.** (Tab. IV. fig. 24.)

Ægithus rufipennis, Chevr. Col. Mex. Cent. i. fasc. 4, no. 2 (1834) [1]; Lac. Monogr. Erotyl. p. 284 [2].
Ægithus cardinalis, var. A, Crotch, Cist. Ent. i. p. 146 [3], et var. *a*, ibid. p. 492 [4].

Hab. MEXICO [2 3 4], Orizaba [1], Cordova, Toxpam, San Andres Tuxtla, Playa Vicente (*Sallé*), Jalapa, Teapa in Tabasco [2], Tapachula in Chiapas (*Höge*), Yucatan [2] (*Gaumer*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Yzabal (*Sallé*), Cubilguitz, Panzos, Teleman, Chacoj, San Juan in Vera Paz, El Reposo, Las Mercedes, Cerro Zunil, San Isidro, Zapote, Dueñas (*Champion*).

5. **Ægithus meridionalis.** (Tab. IV. fig. 25.)

Ægithus meridionalis, Crotch, Cist. Ent. i. p. 146 [1].
Ægithus cardinalis, var. C, Crotch, loc. cit. p. 146, et var. *c*, ibid. p. 493 [2].

Hab. BRITISH HONDURAS, Belize (*Blancaneaux*); NICARAGUA, Chontales [1] (*Janson*, *Belt*); COSTA RICA [1 2], Cache, Irazu (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Very short and convex; the thorax distinctly shorter and more transverse than in *Æ. cardinalis* or *Æ. politus*, the sides very strongly narrowed and a little rounded. Deep brick-red above, the antennæ, legs, scutellum, and underside black; specimens, however, occur with the prosternum pitchy or even reddish. The upper surface is entirely impunctate (with the exception of the epistome, which is alutaceous and obsoletely punctate) and the elytra non-striate. There is the puncture and striola above the antennal socket. The prosternum is not acuminate in the middle of the front, nor much compressed. The metasternal line is distinct, carinate, running nearly across the episterna, then deflexed and passing to the corner of the metasternum and merging in its margin.

There is some confusion about this species—Crotch's type specimen, bearing the name *Æ. meridionalis* in his own handwriting, is from Costa Rica, and has the prosternum quite black. Again, although Crotch says the Chontales specimens all pertain to *Æ. meridionalis* there is no specimen in his collection from that place, and I have reason to think they were at least partly *Æ. politus*, Gorh., which he did not distinguish.

This insect is perfectly distinct from *Æ. cardinalis*, *Æ. rufipennis*, &c. About a dozen examples are before me.

6. **Ægithus clavicornis.**

Chrysomela clavicornis, Linn. Syst. Nat. ed. x. p. 370 (1758) [1].
Erotylus clavicornis, Oliv. Ent. v. p. 479, t. 2. f. 28 [2]; Duponch. Monogr. Erotyl. p. 42, t. 3. f. 59 [3].
Ægithus clavicornis, Crotch, Cist. Ent. i. pp. 147 [4] & 493 [5].

Coccinella surinamensis, Linn. Cent. Ins. 10 (1763)[6].
Ægithus surinamensis, Lac. Monogr. Erotyl. p. 285[7].

Hab. MEXICO, Playa Vicente (*Sallé*), Tapachula in Chiapas (*Höge*); BRITISH HONDURAS, Belize, R. Sarstoon, R. Hondo (*Blancaneaux*); GUATEMALA (*Sallé*), Panzos, Teleman, Cubilguitz, Zapote (*Champion*), Capetillo (*Rodriguez*); NICARAGUA[5], Chontales (*Janson*); COSTA RICA[4 5] (*Van Patten*); PANAMA, Volcan de Chiriqui, David (*Champion*).—COLOMBIA[4 5]; ECUADOR[4 5]; GUIANA, Cayenne[5 7], Surinam[1 2 3 6]; BRAZIL[4 5], Rio Janeiro[7], Amazons[4 5].

This species is widely dispersed and well known; it may be easily recognized by its black head and thorax, brick-red elytra (which are rather smooth and shining), and red abdomen. Numerous examples.

7. **Ægithus uva.**

Ægithus uva, Lac. Monogr. Erotyl. p. 290[1].

Hab. NICARAGUA, Chontales (*Belt, Janson*); COSTA RICA, Cache (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—COLOMBIA[1], Bogota (*coll. Crotch*); ECUADOR.

Many examples.

B. *Elytra gemellate-striate.*

8. **Ægithus jansoni.** (Tab. V. fig. 1.)

Ægithus jansoni, Crotch, Cist. Ent. i. p. 146[1].

"Breviter ovatus, convexus, ochraceus, capite antice impresso, cum thorace lævibus; hoc marginibus anguste lineisque tribus nigris (1 discoidali, 1 utrinque disci); scutello magno, testaceo, lævi; elytris subtiliter gemellato-punctato-striatis, interstitiis lævibus, margine suturaque anguste nigris, disco toto fusco, ochraceo-cincto. L. c. 4 lin." "Intermediate coxal line present."

Hab. NICARAGUA, Santo Domingo in Chontales[1] (*Janson, Belt*).

This species is not contained in Crotch's collection; we have received it from the late Mr. Belt

9. **Ægithus varicollis.**

Ægithus varicollis, Lac. Monogr. Erotyl. p. 291[1]; Crotch, Cist. Ent. p. 491[2].

Hab. GUATEMALA[2]; PANAMA, Bugaba (*Champion*).—COLOMBIA[1 2].

The Guatemalan specimen alluded to by Crotch is not in his collection. A single example captured by Mr. Champion in the State of Panama differs from South-American ones just as the Guatemalan one appears to do, the three black thoracic marks not reaching the front.

10. **Ægithus discoideus.** (Tab. V. fig. 2.)

Breviter ovatus, convexus, ochraceus; ore, antennis, femorum apicibus, tibiis, tarsis, prothoracis elytrorumque

marginibus nigris; his flavis, macula magna discoidali nigro-fusca, tenuiter gemellato-punctato-striatis. Long. 8 millim.

Hab. Costa Rica, Cache (*Rogers*).

A very distinct species, of which unfortunately only one damaged specimen has been received. There is, however, no other known species with which it can be confounded.

11. Ægithus högei.

Ovatus, subopacus, dilute brunneus; antennarum articulis sex ultimis nigris, elytris gemellato-punctato-striatis. Long. 7½ millim.

Hab. Mexico, Chilpancingo in Guerrero (*Höge*).

Rather evenly oblong-ovate, the elytra a little contracted at the base. Head and thorax smooth; the latter transverse, narrower in front, the sides a little rounded, the base evenly bisinuate and not much angulated (less so than usual in *Ægithus*). Elytra dull, but very even; only the two inner pairs of striæ are visible, and they are very faint and almost obliterated, except in the middle. Prosternum not compressed nor punctured. The colour is uniformly pale brown, or ochraceous inclining to brick-red, with the sole exception of the six terminal joints of the antennæ, which are black. This insect is not very closely allied to any other described species, but must be placed near *Æ. lebasi*. I have only seen the four specimens captured by Herr Höge.

12. Ægithus lebasi.

Ægithus Lebasii, Lac. Monogr. Erotyl. p. 285 [1].
Ægithus cassideus, Lac. loc. cit. p. 295 [2].

Hab. Costa Rica, Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui, David, Tolé (*Champion*).—Colombia [2], Cartagena [1].

13. Ægithus quadrinotatus.

Ægithus quadrinotatus, Chevr. Col. Mex. Cent. i. fasc. 4, no. 89 (1834) [1]; Lac. Monogr. Erotyl. p. 283 [2]; Crotch, Cist. Ent. i. p. 146 [3].
Ægithus clathratus, Lac. loc. cit. p. 282 [4].

Hab. Mexico [1], Orizaba [2 3], Toxpam, Juquila (*Sallé*), Cordova (*Höge*), Teapa [3], Tabasco [4], Yucatan [4] (*Gaumer*); British Honduras, Belize, R. Sarstoon (*Blancaneaux*); Guatemala, Purula, San Gerónimo, Balheu, Cubilguitz, Chacoj, San Joaquin, San Juan in Vera Paz, Panzos (*Champion*); Nicaragua, Chontales [3] (*Belt, Janson*).

14. Ægithus duplicatus.

Ovatus, antice et postice acuminatus, sordide testaceus, nitidus; antennarum clava, verticis macula, prothoracis basi, sutura tenuiter, scutello, geniculis tarsisque nigris, elytris gemellato-striatis. Long. 8–9 millim.

Hab. Guatemala (*Sallé*), Capetillo, Zapote, Las Mercedes, San Gerónimo, Chacoj (*Champion*); Nicaragua, Chontales (*Belt*).

This is a rather variable species and apparently liable to discoloration, but the amount of variation is not great. Sometimes the tibiæ are wholly black; in some examples the thorax has only the base on each side of the middle narrowly black, while others have three distinct triangular dots (the middle one the most produced) on the base. In the single specimen in Sallé's collection (which is the only one I have seen not discoloured) the general colour is pale ochraceous-yellow; six joints at the base of the antennæ are yellow, but in the Chontales examples, which seem to be otherwise inseparable, only two are yellow; and the episterna are pitchy-black. The front margin of the thorax is often narrowly black in the middle. The gemellate series of punctures on the elytra are distinct, but not large, vanishing one third before the apex, and the external pair are almost obsolete. The oblong-oval, but acuminate, form distinguishes this species from any of its section at present described. It is very like *Strongylosomus peruvianus*, Crotch, in general appearance, but the longer antennæ prevent its being placed nearer to that species.

A considerable number of specimens were obtained by Mr. Champion. I have only seen two from Nicaragua.

15. **Ægithus strigicollis.**

Late ovatus, ferrugineus; prothoracis striga longitudinali, antennis pedibusque nigris, scutello fusco, elytris nitidis, gemellato-striatis. Long. 7–9 millim.

Hab. Panama, David, Bugaba (*Champion*).

Closely allied to *Æ. lineola*, Lac.; but rather more acuminate before and behind, more shining, and of a clearer rusty-red colour. The second joint of the antennæ alone is testaceous, the basal joint and the long third joint being more or less infuscate or almost black. The epistoma is minutely but obsoletely punctured. The elytra are very finely but distinctly gemellate-striate, with small close punctures in the striæ, as in *Æ. lineola*. The legs are black, but have the coxæ and trochanters of the colour of the body. Body beneath smooth; the metasternal line distinct, reaching to the episterna. Five examples, varying in size but not much in colour. The scutellum is scarcely darker than the elytra in two of them.

16. **Ægithus dubius.**

Breviter ovatus, convexus, nitidus, brunneo-testaceus; antennis (articulis duobus primis exceptis), scutello, tibiis tarsisque nigris; capite prothoraceque glabris, elytris lævibus, obsolete punctulato-striatis, punctulis ante apicem desinentibus. Long. 7 millim.

Hab. Panama, Bugaba, Caldera (*Champion*).

Nearly of the same form as *Æ. lineola*; but more polished and shining than either that species or *Æ. strigicollis*, and the elytral striæ are not gemellate. The third joint of the antennæ is partly yellow. The thorax is spotless, very shining, and glazed; its sides are more rounded than in *Æ. strigicollis*, and very much narrowed from the base

to the anterior angles; and the base is not so much angulated, but almost straight (though slightly bisinuate) and with a broad and indistinct median lobe. The elytra are very smooth and glabrous and have numerous rows of fuscous dots; the punctures are larger and more distant than in *Æ. strigicollis*, and eight rows are visible though they terminate at one third from the apex. The underside and femora are rather paler ferruginous-red than the upperside usually is, glabrous, and shining. The prosternum is not compressed but convex; the metasternal lines are distinct, and produced backwards till they unite with the marginal impressed stria.

This and some other allied species might from the form of the thorax be placed with equal propriety in *Brachysphenus*, the **V**-shaped form having quite merged here into the ordinary form. *Æ. dubius* is, however, clearly allied to *Ægithi* of the *Æ. monochrous* and *Æ. lineola* group; and there is really no other distinction than that of general form between the two genera.

Five specimens from Bugaba and one from Caldera.

17. **Ægithus stillatus.**

Breviter ovatus, convexus, flavo-ferrugineus, nitidus; capitis puncto, antennarum clava, prothoracis lineis tribus et limbo laterali, scutello elytrorumque punctis numerosis, sutura margineque tenuiter, nigris; elytris punctulis impressis, punctis nigris cingentibus, interdum obliteratis. Long. 6–7½ millim.

Hab. MEXICO (*Sallé*); BRITISH HONDURAS, Belize (*Blancaneaux*).

This is a very curious species, not allied to any other known to me; but from the numerous black dots on the elytra recalling *Æ. burmeisteri*. The head and thorax are smooth and shining—of a rich fulvous-red in the Mexican example, yellowish in the Belize specimens. The antennæ have a four-jointed club; these joints and one or two preceding them are black, the basal joints being testaceous. The elytra are brownish-yellow (as in *Æ. punctatissimus* and *Æ. burmeisteri*); the suture and lateral margins in the Mexican example being of the rich red colour of the thorax, but in the Belize specimens very narrowly black. The legs and underside are fulvous, the tibiæ externally and the tarsi infuscate, the episterna pitchy. The metasternal lines are visible.

Two specimens from British Honduras and one from Mexico are all I have seen of this species.

18. **Ægithus (?) grammicus.** (Tab. V. fig. 3.)

Ovatus, valde convexus, nitidissimus, glaber, saturate flavus; antennis (articulis duobus primis exceptis), prothoracis maculis quatuor oblongis, transverse sitis, scutello, elytrorum sutura, macula communi suturali et tribus aliis irregularibus, geniculis, tibiis tarsisque, nigris. Long. 7 millim.

Hab. GUATEMALA, Sabo, San Juan in Vera Paz (*Champion*).

Head and thorax smooth, yellow, the former inclining to ferruginous and pitchy at the base; the latter with four elongate pitchy-black spots, its sides much narrowed from the base, the front margin almost semicircularly cut out, the base angular.

Elytra yellow, with ferruginous clouds and black spots, strongly convex; very delicately punctate-striate, the punctures only distinct in the central part, and the sutural row almost entire, but with this exception they are smooth; the black spots are—one near the base (like a Hebrew character, with a small projection joining it to the base), one median (like three oblong spots united), one subapical (heart-shaped), and one in the middle of the suture, common to both elytra, oblong. Legs testaceous-red, the extreme tips of the thighs and the tarsi dark pitchy-red, the tibiæ almost black. Underside testaceous. Two examples.

BRACHYSPHENUS.

Brachysphœnus, Lacordaire, Monogr. Erotyl. p. 296 (1842); Crotch, Cist. Ent. i. p. 496 (1876).
Morphoides, Hope, Rev. Zool. 1841, p. 111; Lacordaire, loc. cit. p. 356.
Megaprotus, Lacordaire, loc. cit. p. 297.
Habrodactylus, Lacordaire, loc. cit. p. 311.
Acronotus, Lacordaire, loc. cit. p. 332.
Sternolobus, Guérin, Rev. Zool. 1841, p. 118; Lacordaire, loc. cit. p. 333.
Iphiclus, Lacordaire, loc. cit. p. 337.
Ægithomorphus, Lacordaire, loc. cit. p. 374.
Oogaster, Lacordaire, loc. cit. p. 377.
Barytopus, Lacordaire, loc. cit. p. 379.
Brachymerus, Lacordaire, loc. cit. p. 405.

The synonymy quoted above will show that this is a very extensive genus whose limits it is difficult to define. In treating of a local fauna it would be undesirable to revive any of the above names. Lacordaire only notices them as subgenera. We quote them as they have been so generally used in collections. *Brachysphenus* contains about one hundred and eighty described species, but many more exist in collections. They are all American, and are confined to the tropics. The species are generally of moderate size, and very varied in colour and pattern.

Sect. 1. (MEGAPROTUS.)

1. **Brachysphenus delineatus.** (Tab. V. figg. 7; 8, *var.*)

Brachysphœnus delineatus, Lac. Monogr. Erotyl. p. 306[1]; Crotch, Cist. Ent. i. p. 497[2].

Hab. PANAMA[2], Bugaba, David (*Champion*).—COLOMBIA[1]; GUIANA, Cayenne[1]; BRAZIL[2], Rio Janeiro (*coll. Gorham*); AMAZONS, Pará (*coll. Gorham*).

The specimens which Mr. Champion collected of this beautiful species are considerably larger than the two from Panama in Crotch's collection, being a little over eight (instead of from six to seven) millimetres in length. It is distinguished from the species which follows, and with which it might easily be confused, by the more oblong form, by the different denticulations of the yellow fasciæ (which a reference to the

figures will explain better than any description), and also by the yellow margin of the thorax. The single example from David (fig. 8) is a distinct variety, in which the pitchy-black disc of the thorax is divided into four spots.

2. **Brachysphenus pulcher.** (Tab. V. fig. 9.)

Ovalis, postice subacuminatus, dilute piceus, supra saturatius piceus vel nigro-piceus, nitidus; elytris striis tribus vel quatuor dorsalibus tenuissimis, fasciis duabus valde denticulatis (anteriore ad scutellum et ad humerum reflexa, denticulis duobus interioribus, tribus exterioribus; posteriore arcuata, denticulis tribus exterioribus, duobus interioribus, et ad suturam versus apicem reflexa), læte flavis. Long. 8–8½ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

More convex and more widely oval than *B. delineatus*; the head and thorax pitchy-black, the front of the former and the front angles of the latter paler, but never with any defined yellow margin. The much indented yellow fasciæ are somewhat similar to those of *B. delineatus*; they do not, however, as in that species, form two round black spots at the base of the elytra, but one bifurcate spot. The posterior fascia is reflexed at the suture towards the apex of the elytra, whereas in *B. delineatus* it is reflexed towards their base. The underside in both species is plain pale pitchy-red. The prosternum is rather more acutely compressed in front in *B. delineatus*. The legs in both are pale pitchy-red.

Mr. Champion captured many examples of this very beautiful insect.

3. **Brachysphenus catillifer.** (Tab. V. figg. 10; 11, *var.*)

Brachysphœnus zonula, Crotch, Cist. Ent. p. 147[1] (pars).

Oblongo-ovatus, parum convexus, flavo-ferrugineus, verticis puncto, prothoracis disco elytrisque piceis, his fascia basali cum altera pone medium obliqua per vittam lateralem conjuncta; antennis piceis, articulis duobus basalibus rufis. Long. 7½–9 millim.

Hab. NICARAGUA, Santo Domingo in Chontales (*Janson*[1], *Belt*); COSTA RICA, Cache (*Rogers*).

I have carefully compared this insect with Crotch's type-specimens of *B. zonula* in his collection, and come to the conclusion that it is a distinct species from the Ecuador insect. It differs as follows:—It is shorter and more robust; the ring-like band in *B. catillifer* covers the shoulder, instead of leaving it of the pitchy-black ground-colour; and the posterior part of the hind fascia is more produced towards the apex of the elytra.

Janson's specimens have the basal fascia denticulate, but Belt's have the band nearly or quite simple, as is also the case in one from Cache.

4. **Brachysphenus dilectus.**

Oblongo-ovatus, parum convexus, niger; capite utrinque prope oculos, ore, palpis, antennarum articulis duobus

primis tarsisque, rufo-piceis; elytris punctato-striatis, striis ad basin et ad apicem obliteratis, fasciis duabus flavis, una basali, altera postmediana obliqua, latiore, subdenticulatis. Long. 7 millim.

Hab. PANAMA, Volcan de Chiriqui (*Ribbe*).—PERU (*coll. Gorham*).

This insect though evidently allied to *B. fasciellus* and its allies is less convex; the thorax especially is flatter, and it is entirely black. The body moreover is black, instead of being, as usual in species of that section, yellow or pitchy. The basal yellow fascia of the elytra leaves the shoulder and a double spot near the scutellum black; the black portion between this and the postmedian fascia is much narrowed towards the margin; the epipleuræ are yellow; and the seven series of rather large punctures are quite distinct. Only one example of this species has been received from Chiriqui, and its antennæ are almost entirely gone. I possess, however, two specimens of the same species collected in Peru by the late Mr. Buckley, which only differ in being slightly larger, and in one of them having a small pitchy spot on the thorax near the front angles, while in the other the head is entirely black.

5. **Brachysphenus nuculus.**

Ovatus, convexus, nitidissimus, niger, abdomine elytrisque fulvis, ore rufo. Long. 8 millim.

Hab. MEXICO, Toxpam (*Sallé*).

The head and thorax are black and very shining; the former is broadly impressed in front, with the labrum and palpi rufous; the antennæ are black and as long as the head and thorax; the front margin of the latter is semicircularly excavate; scutellum black, partly covered by the median lobe of the thorax; elytra quite smooth and without striæ, although darker lines faintly indicate their position; body and legs quite black and smooth; the prosternum compressed and elevated in front; abdomen bright red, of the same colour as the elytra. This species is coloured exactly like *B. fulviventris*, but is smaller and has precisely the form of a *Megaprotus*.

Sect. 2.

6. **Brachysphenus cereus.**

Oblongus, parum ovatus, convexus, nitidissimus, lucide ochraceus, fere glaber; antennis, pedibus, scutello, palporum et mandibularum apicibus nigris, unguibus rufis, elytris leviter et tenuiter punctato-striatis. Long. $8\frac{1}{2}$–9 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Head a little produced, the epistoma distinct, very minutely punctured; labrum distinct; ocular striola and the puncture above the antennal socket well defined. Antennæ as long as or longer than the head and thorax, with a distinctly four-jointed club, but the eighth and apical joints narrower than the ninth and tenth. Thorax much narrowed anteriorly, the sides gently rounded, the front emargination deep, nearly semicircular, but straight in the middle; the basal margin bisinuate, its median lobe

not very strong. Elytra broad, very even, with fine punctured striæ, the interstices quite flat and even, the series evanescent towards the apex. Underside quite smooth and even. The prosternum has a broad intercoxal process, with a minute impressed puncture on each side, the front not much compressed and terminating in a point which is but little produced or elevated. The central part of the mesosternum is transverse; the metasternal lines are very distinct, terminating before reaching the episterna, the latter with the epimera broad and smooth. The abdomen is not quite so even as the rest of the underside; the segments are vaguely impressed on each side, and these impressions are sometimes infuscate. The legs are black, including the trochanters, but the coxæ are entirely of the waxy-yellow colour of the body, and the claws are red.

Eight specimens of this very neat though plainly-coloured species were obtained, two of them at elevations between 4000 and 6000 feet, the others at lower altitudes on the Volcan de Chiriqui.

7. **Brachysphenus exiguenotatus.**

Ovatus, convexus, brunneo-castaneus, antennis (articulis duobus basalibus exceptis) nigris; elytris postice subacuminatis, seriatim punctulatis, singulis puncto basali obsolescente alteroque mediano, marginem lateralem versus, interdum geminato, nigris; tibiarum basi tarsisque fuscis. Long. 7–8 millim.

Hab. NICARAGUA (*Sallé*); PANAMA, Volcan de Chiriqui (*Champion*).

Of the form and size of *B. spadiceus*, or nearly so; very polished and shining; the thorax very short and transverse, its disc convex and very smooth, its sides narrowing from the base and very faintly rounded, the base gently bisinuate and with a few obsolete punctures along the margin, the median lobe feeble. Scutellum red. Elytra very convex, ovate-cordate, slightly gibbous; each with seven rows of rather distinct punctures, vanishing towards the apex, and each with a black dot, made up of two or three black punctures, at the base of the third and fourth striæ, and a similar but often double dot on the sixth and seventh striæ near the middle. Prosternum strongly compressed and pointed in front. Margins of the epipleuræ blackish; the base of the tibiæ infuscate.

Two specimens from Nicaragua and one from the Volcan de Chiriqui.

8. **Brachysphenus brevicollis.**

Oblongo-ovatus, lucide ferrugineus, nitidus, glabratus; antennis (articulis duobus primis exceptis), scutello tibiisque basi nigris, tarsis infuscatis. Long. $5\frac{1}{2}$–7 millim.

Hab. PANAMA, Bugaba (*Champion*).

Head and thorax glabrous, shining, pale rusty-yellow; the latter very short, and with the disc convex, the sides strongly contracted to the front angles and very evidently rounded, the front angles acute and prominent, the base bisinuate and with a well-defined median lobe. Elytra almost smooth, but with striæ formed of fuscous punctures visible beneath the surface and only minutely impressed above. Scutellum black.

The antennæ are as long as or a little longer than the head and thorax; the two basal joints yellow, the third pitchy or varied with yellow and black, the fourth and fifth elongate and fusiform, the sixth and seventh a little shorter and more obconic, the eighth obconic, scarcely forming part of the club; the last three joints wider, produced on each side; the apical joint about as wide as long, but compressed and contracted at the tip.

Three specimens from Bugaba agree very closely with the description I have given, and in size; a fourth is much smaller, and has not the fuscous punctures, but the striæ rather more distinctly impressed; while one specimen, also from Bugaba, has the elytra rather more produced at the apex, entirely smooth and unicolorous, but with numerous most minute punctures both in the obsolete striæ and irregularly in the interstices. This species is allied rather closely to *B. concolor*, but appears (according to a specimen of that species from Reiche's collection) to differ from it in having the thorax shorter, more convex and shining, and (according to Lacordaire's description) by the striæ and punctures being more effaced.

9. **Brachysphenus striatipennis.**

Oblongo-ovatus, convexus, flavo-testaceus, nitidus; antennis (basi excepta), scutello tarsisque nigricantibus; elytris tenuiter distincte punctato-striatis, striis fere integris, punctis fuscis. Long. 6½–8 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species is so very near to *B. brevicollis* that it will suffice to point out the differences:—The antennæ are thinner; the thorax is not quite so short, and less convex, and the median lobe at the base is less distinctly produced and truncate; the punctures of the elytral striæ are more distinctly impressed; and the legs have only the tarsi infuscate. *B. striatipennis* appears to agree very closely with Lacordaire's description of *B. concolor*; but to differ by not having the tibiæ infuscate, and by the striæ being continued almost to the apex of the elytra. It differs also from the representative of that species in Crotch's collection.

10. **Brachysphenus pallidipennis.**

Oblongus, elytris longioribus, testaceis, nitidus, fere glaber; prothoracis disco convexo, rufo-testaceo, lateribus late et elytris pallidioribus, his fusco punctato-striatis, vix impressis; antennis (articulis duobus primis exceptis), scutello, tibiis tarsisque nigris. Long. 9 millim.

Hab. PANAMA, Bugaba (*Champion*).

This species is exceedingly close to, and difficult to separate satisfactorily from, *B. brevicollis*. If, however, great latitude is not to be allowed to proportionate form in this genus, the longer and rather flatter thorax, and the much longer, more pointed, and gibbous elytra indicate a distinct species. In three specimens, which seem to agree in this respect, I notice also that the median lobe of the base of the thorax is very narrowly black at the tip; the tibiæ are quite black in two examples, in the third they are rufous at the tarsal end.

11. **Brachysphenus jejunus.**

Oblongus, parum ovatus, lucide rufo-testaceus, pernitidus; antennis (articulis duobus primis exceptis), scutello tarsisque nigris; prothorace brevi, convexo, lateribus fortiter rotundatis, antice angustatis; elytris olivaceo-luteis, versus suturam indeterminate rufo-testaceis, fusco punctato-striatis, fere lævibus. Long. 8½–9 millim.

Hab. Mexico, Toxpam (*Sallé*).

Allied to, and about the same size as, *B. ictericus*, but in that species the thorax is not so short and the scutellum is yellow. Head, thorax, and body beneath of a clear reddish-testaceous colour, and very glabrous and as it were varnished. Antennæ short, hardly so long as the head and thorax; in one specimen the second joint is infuscate.

Sect. 3. (Habrodactylus.)

12. **Brachysphenus conspicillatus.** (Tab. V. fig. 12.)

Ovatus, antice et postice acuminatus, flavo-testaceus; antennis (articulis duobus primis exceptis), scutello, tarsis annulisque duobus elytrorum (anteriore obcordato) nigris; elytris confuse punctato-striatis, interstitiis obsolete punctatis, striis nonnunquam subgemellatis. Long. 8–9 millim.

Hab. Costa Rica (*Van Patten*), Cache (*Rogers*).

This insect is rather nearly allied to and resembles *B. perspicillatus*, Lac., from Colombia. *B. conspicillatus* differs in being rather larger, more acuminate before and behind, and by the curious and generally indistinct rings of the elytra being blacker and larger, and not united (they are often formed by the punctures at that part being black, with a blackish appearance under the surface between them); but more especially by the striæ not being so regularly and evenly disposed—there is generally a wide space in the middle between the fifth and sixth. The anterior ring has an angular projection just reaching the base of the elytra; the posterior one is nearly round, almost touching the margin, but it is often open at that part for a short distance. About a dozen examples have been received from Cache.

Sect. 4. (Iphiclus.)

13. **Brachysphenus sedecim-maculatus.** (Tab. V. fig. 13.)

Erotylus 16-*maculatus*, Buquet, Rev. Zool. 1840, p. 173[1].

Brachysphœnus 16-*maculatus*, Lac. Monogr. Erotyl. p. 348[2]; Crotch, Cist. Ent. i. p. 510[3].

Hab. Panama, David (*Champion*).—Colombia[1 2 3]; Peru (*coll. Gorham*).

Sect. 5. (Morphoides.)

14. **Brachysphenus fulviventris.**

Ovatus, valde convexus; niger, elytris abdomineque fulvis, illis punctato-striatis. Long. 10 millim.

Hab. Guatemala, San Gerónimo and Chiacam in Vera Paz (*Champion*).

Allied to and of the same form as *B. lacordairii*, Crotch (=*B. clavicornis*, Lac.),

black, with the elytra and abdomen dark fulvous-red; the former punctate-striate, but with the first four striæ only distinct at the base, and all obliterated before the apex, and those external to the short fifth stria also quite obliterated. The head and thorax are glabrous; the antennæ entirely black. The prosternum is compressed, but not elevated or pointed, in front. The scutellum is pitchy-red in the San Gerónimo specimen; in two others from Chiacam it is black. *B. fulviventris* is the only known species of this convex oval form, acuminate before and behind, with the abdomen red, which has the striæ obliterated externally. In the San Gerónimo specimen the coxæ are red also, but it does not appear to be distinct from those from Chiacam.

15. **Brachysphenus scutellaris.**

Oblongus, ferrugineus; antennis (articulis duobus basi scutelloque rufescentibus), femorum apicibus, tibiis tarsisque nigris; prothoracis lateribus antice angustatis, angulis anterioribus et posticis acutis, disco opalescente. Long. 10 millim.

Hab. GUATEMALA, Cerro Zunil (*Champion*); NICARAGUA, Chontales (*Belt*); COSTA RICA (*Van Patten*).

Very nearly allied to *B. rubidus*, Duponch.; but differing from it in having the scutellum black and the upper surface of a less sanguineous-red colour, as well as in minor details.

The antennæ are thinner and have all the joints (especially those intermediate between the second and the club) longer. The lobe in the middle of the base of the thorax has its tip black in two examples, viz. in the one from Guatemala, and in another from Costa Rica, and these have also the extreme limb of the lateral margins of the thorax and elytra black. The opalescent tint of the prothorax appears to be a specific character; but none of the specimens received (there being only one from each locality) are in good condition.

16. **Brachysphenus hæmatocephalus.**

Brachysphœnus hæmatocephalus, Lac. Monogr. Erotyl. p. 361[1].

Hab. PANAMA, Bugaba, Volcan de Chiriqui, David, San Feliz (*Champion*).—COLOMBIA[1].

Var. Elytrorum macula discoidali nigra, abbreviata.

Hab. PANAMA, Volcan de Chiriqui (*Ribbe*).

The basal segment of the abdomen is black, and bears a pubescent dot in one sex; the following three segments are red with black spots on the sides; the apical segment is red, rarely spotted. Many examples.

17. **Brachysphenus adamsi.**

Brachysphœnus Adamsi, Lac. Monogr. Erotyl. p. 366[1].

Hab. PANAMA, Tolé (*Champion*).—COLOMBIA[1].

A single specimen.

18. **Brachysphenus melanopus.**

Oblongus, antice angustatus; elytris ovatis, convexis, gibbosis, rubidis; antennis pedibusque nigris. Long. 9–10 millim.

Hab. PANAMA, Volcan de Chiriqui, Caldera (*Champion*).

This species is of a deep but lucid brick-red colour, with black antennæ and legs; the tips of the palpi and the mandibles are blackish, but the coxæ are red like the body. The head and thorax are smooth and shining, the former often with two impressions between the eyes; the latter narrowing in front, with slightly rounded sides, the base bisinuate, forming acute hind angles, and the middle lobe separated by a shallow transverse depression from the disc. Elytra very convex, and a good deal wider in the middle than the thorax, punctate-striate, the interstices a little rough, but the sculpture obsolete and not distinct, so that the surface is shining. There are no true coxal lines, but the area over which the middle femora move is faintly indicated by an obsolete carina. This species is nearest, I think, to *B. rubidus*, but is more convex. We have received three specimens from Caldera and one from the Volcan de Chiriqui.

Sect. 6. (BARYTOPUS.)

19. **Brachysphenus nigropictus.**

Brachysphœnus nigropictus, Lac. Monogr. Erotyl. p. 387[1]; Crotch, Cist. Ent. i. pp. 147[2], 502[3].

Hab. NICARAGUA[3], Santo Domingo in Chontales[2] (*Belt*, *Janson*).—COLOMBIA[1 3]; VENEZUELA[2].

The variety recorded by Crotch[3] from the Amazons under the name *B. decoloratus* is, I think, a distinct species. *B. nigropictus* is not uncommon at Chontales.

20. **Brachysphenus fragmentatus.** (Tab. V. fig. 16.)

Oblongo-ovatus, modice convexus, piceo-brunneus, nitidus; capitis punctis duobus, prothoracis maculis sex punctoque medio nigris; elytris nigro-piceis (sutura apiceque dilutiore), lunula humerum subcingente ad basin hamata, maculis tribus, fasciaque subapicali dentata flavis. Long. 10–11 millim.

Hab. GUATEMALA, Capetillo, Zapote (*Champion*).

The form of this species somewhat resembles that of a *Prepopharus*; but the antennæ are not so long, being only a little longer than the head and thorax, and they are pitchy-black with two joints at the base red. The thorax is narrower at the base than the elytra (which latter widen gradually from the shoulders to the middle); it is transverse, considerably narrowed in front, and the front margin is almost semicircularly emarginate; on each side of the middle are three spots of irregular shape (disposed in a triangle), and there is one small round spot in the middle near the base; the disc is obsoletely punctate, and there is an uneven fossa before the hind angles. The elytra are striate only at the base, where several short rows of punctures are present; the humeral lunule is sometimes united with another lunular marking which

turns the reverse way, *i. e.* towards the suture, but both lunules are more frequently broken into two or more irregular spots; beyond the middle on each elytron are two squarish spots, placed somewhat obliquely, and an apical undulate fascia. The underside and legs, as well as the elytral epipleuræ, are pitchy-red; all the segments of the abdomen have a dark spot on each side. The antennæ are pitchy-red at the base, with five or six joints at the apex blackish-brown.

21. **Brachysphenus spectabilis?**

Brachysphœnus spectabilis, Lac. Monogr. Erotyl. p. 392[1].

Hab. PANAMA, Bugaba (*Champion*).—COLOMBIA[1].

A single specimen, which is, I think, probably referable to this species. I have not, however, seen any authenticated specimen of *B. spectabilis*. The Bugaba insect is black with the abdomen and elytra yellow; the latter with two fasciæ very narrowly interrupted at the suture, and not touching the margin, and the apex black. This insect is somewhat allied to *B. venezuelæ*, Crotch.

Sect. 7. (BRACHYMERUS.)

22. **Brachysphenus festivus.** (Tab. V. fig. 14.)

Brachysphœnus festivus, Lac. Monogr. Erotyl. p. 332[1].

Priotelus festivus, Crotch, Cist. Ent. i. p. 555[2].

Hab. MEXICO[1 2], Toxpam, Cordova, Playa Vicente (*Sallé*).

I see no advantage in transferring this insect to the genus *Priotelus*, from typical species of which it differs very much in form.

23. **Brachysphenus multiguttatus.** (Tab. V. fig. 15.)

Oblongus, elytris ovatis, pallide flavescens, glaber, nitidus; antennis (basi excepta), tibiis tarsisque fuscis; elytris singulis maculis quatuordecim et linea juxta suturam undulata nigro-piceis. Long. 6 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Senahu in Vera Paz (*Champion*).

Antennæ long and thin, the basal three or four joints pale testaceous, the rest blackish; the third to the seventh joints all elongate, but the third the longest; the eighth elongate and widened at its apex, so as to commence the long and lax club. The head has the muzzle produced rather more than in typical *Brachysphenus*, and conical, the antennæ inserted in sockets which have a raised, slightly tubercular ridge above; the crown has an obscure fuscous spot. Thorax twice as wide as long, glabrous, testaceous, with a fuscous cloud in the middle; the hind angles are acute, the sides nearly straight at the base, but rounded in front to the front angles, the front broadly and deeply excised. The elytra are moderately convex and slightly gibbous,

the apex much depressed, without striation, but rendered uneven by obsolete irregular and feebly impressed punctuation; close to the margin is an impressed line in which are rather deeper punctures. The fourteen spots are of various sizes, and sometimes one or two pairs are confluent; there are three basal (the one on the callus the largest), three subapical, five forming a sort of fascia before the middle (the two inner ones oblong and adjacent and larger), and three placed transversely between these and the three subapical ones. Underside and legs testaceous, the knees, tibiæ, and tarsi pitchy-black. Allied to *B. festivus*; the spots more defined and not broken up, also differently disposed. Five specimens from Senahu, and one from Teapa, the latter, however, not altogether agreeing with the others.

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24. **Brachysphenus** —— ?

Hab. Costa Rica, Cache (*Rogers*).

A single specimen of a small *Brachysphenus* of the *Megaprotus* section, allied to *B. catillifer*, but not in a sufficiently perfect condition for description.

The following species is unknown to me.

25. **Brachysphenus oblitus.**

Brachysphœnus oblitus, Lac. Monogr. Erotyl. p. 325 [1].

"Ovatus, læte luteo-flavus, antennis, scutello, pectore pedibusque piceis; elytris convexis, punctato-striatis, singulo punctis tribus baseos in triangulum digestis. Long. $3\frac{1}{2}$, lat. $2\frac{1}{4}$ lin."

Hab. Mexico [1].

EROTYLUS.

Erotylus, Fabricius, Syst. Ent. p. 123 (1775); Lacordaire, Monogr. Erotyl. p. 416 (pars); Crotch, Rev. Erotyl., Cist. Ent. i. p. 525; Chapuis, Gen. Col. xii. p. 62 (pars).

Erotylus as restricted by Crotch contains only the species of Lacordaire's first division; his remarks, however, apply to the whole genus as constituted by Lacordaire. As adopted by me it includes only such species as have the front of the head not constricted at the point of insertion of the antennæ, and the elytra more or less variegated or entirely black. About sixty-five species have been described, all from Tropical America, and the genus is in great part confined to the Southern continent.

Some of the members of this and the following genus bear a very close resemblance to certain Tenebrionidæ, e. g. *Cuphotes* (=*Spheniscus*); and (according to Mr. Champion) they are frequently to be found together about the fungoid growth on decaying trees in the forest.

1. **Erotylus leopardus.** (Tab. V. figg. 17, 18, 19; 20, *var.*)

Erotylus leopardus, Lac. Monogr. Erotyl. p. 442[1].
Erotylus confluens, Crotch, Cist. Ent. i. p. 531[2].

Hab. Mexico[1 2], Toxpam, Cordova (*Sallé*), Jalapa (*Höge*), Juquila (*Boucard*), Yucatan[1]; Guatemala[2] (*Sallé*), Cubilguitz, Panima, Purula, Senahu, Sinanja, Zapote (*Champion*); Nicaragua, Chontales (*Belt*); Costa Rica, Cache (*Rogers*).

This species is subject to a good deal of variation, and the markings are seldom symmetrical on the elytra. The numerous examples from different localities now before me show conclusively that *E. confluens*, Crotch, is only one of the numerous varieties in which the black markings are very much reduced in size. The single specimens from Chontales and from Cache are of a bright orange-yellow with rufous margins and epipleuræ, and are very similar to *E. nicaraguæ*.

The figures 17, 18, and 19 are of varieties of this species from Jalapa; figure 20 is taken from a specimen of the variety *E. confluens*, Crotch, from Purula in Vera Paz.

2. **Erotylus nicaraguæ.** (Tab. V. fig. 21.)

Erotylus Nicaraguæ, Crotch, Cist. Ent. i. pp. 148[1], 532.

Hab. Nicaragua, Santo Domingo in Chontales (*Janson*[1], *Belt*).

" Ovatus, niger, nitidus, thorace punctato, elytris læte flavis, sat regulariter gemellato-striatis, maculis nigris tessellatis, margine epipleurisque rufis. L. c. $7\frac{1}{4}$ lin."

It seems probable that this is only a local variety of *E. leopardus* in which the black markings are divided into spots by the geminate striæ, so that the interstices between the second and third, and between the fourth and fifth are free from black marks, and the spots are thus clathrate. I see no other difference, as the bright orange colour is repeated in a specimen from Chontales which is certainly *E. leopardus*. Two examples captured by the late Mr. T. Belt agree with Crotch's type.

3. **Erotylus nigronotatus.** (Tab. VI. fig. 1, ♂.)

Oblongus, modice convexus, niger, nitidus; elytris albido-flavis vel pallide ochraceis, margine reflexo, epipleuris, apice maculisque punctiformibus in singulis circa sedecim, nigris, punctorum seriebus pone medium obliteratis. Long. 14–16 millim.

Mas pedibus longioribus, femoribus anticis parum incrassatis, segmento primo ventrali areola piligera.

Hab. Panama, Bugaba, Volcan de Chiriqui 3000 feet (*Champion*).

This curious species of *Erotylus* is not very closely allied to any other yet described; it perhaps comes nearest to *E. herpestes*, Lac. The elytral spots are not impressed, the series of punctures running over them; the humeral callus is black, this spot being united to the base; the central lateral spot is also usually, but not always, united to the margin; and there is a black dash running a little way up the suture from the

black apex. The piliferous spot in the male is a small patch clothed with blackish-brown hair.

Twelve specimens, seven of which are males.

CYPHEROTYLUS.

Cypherotylus, Crotch, Cist. Ent. i. p. 148 (1873), & p. 537 (1876).

Under this name Crotch included all those species of Lacordaire's genus *Erotylus* which have the front of the head coarctate, the elytra with black impressed punctures, and the thorax margined at the base. Many of the species are remarkable for the way in which their elytra are elevated. This genus attains a higher degree of latitude than the true *Erotyli*, several species being found in Mexico, and one or two passing the Rio Grande, while comparatively few are known as existing south of the Amazons.

Section I. *Elytra strongly gibbose, the middle of the suture acuminate.*

1. **Cypherotylus debauvei.** (Tab. VI. figg. 2, 2 *a*, ♂.)

Erotylus Debauvei, Demay, Rev. Zool. 1838, p. 23 [1]; Lac. Monogr. Erotyl. p. 457 [2].
Cypherotylus Debauvei, Crotch, Cist. Ent. i. p. 538 [3].

Hab. Panama, Volcan de Chiriqui 2500 feet (*Champion*).—Colombia [2 3]; Guiana [1 2], Cayenne [2 3]; Bolivia [2]; Brazil [3].

Two specimens, a male and a female, of this species are all I have seen from Central America. It is easily recognized among other species of the same section by the two posterior pairs of legs having the femora coral-red in the middle.

2. **Cypherotylus dromedarius.**

Erotylus Dromedarius, Lac. Monogr. Erotyl. p. 455 [1].
Cypherotylus dromedarius, Crotch, Cist. Ent. i. pp. 148 [2], 538 [3].

Hab. Nicaragua, Chontales [2] (*Belt, Janson*).—Guiana, Cayenne [1 3].

Section II. *Elytra gibbose, the suture forming an even keel.*

3. **Cypherotylus gibbosus ?** (Tab. VI. figg. 3, 3 *a*.)

Chrysomela gibbosa, Linn. Cent. Ins. p. 10 (1763).
Erotylus gibbosus, Fabr. Syst. Eleuth. ii. p. 4; Oliv. Encycl. Méth. vi. p. 432; Herbst, Käf. viii. p. 366, t. 137. f. 5; Duponch. Monogr. Erotyl. p. 7, t. 1. f. 2?; Lac. Monogr. Erotyl. p. 453 [1].
Cypherotylus gibbosus, Crotch, Cist. Ent. i. p. 538 [2].
Erotylus tigrinus, Voet, Cat. Syst. Col. ii. p. 62, t. 44. f. 2.

Hab. Nicaragua, Chontales (*Belt*); Panama, Volcan de Chiriqui (*Trötsch*).—South America; Guiana, Cayenne [1 2], Surinam.

Two specimens, which I refer with some doubt to this species, only differ from examples in Crotch's collection in the central and lateral black spots on the elytra being united and forming a broad fascia, indented on the basal side. In form they agree precisely with others from South America; but they are rather larger than the average. Considerable doubt exists as to what species should be referred to the *Chrysomela gibbosa* of Linnæus; the description, however, agrees with the form here recorded. The example figured is from Chontales.

4. **Cypherotylus elevatus.** (Tab. VI. figg. 4, 4 *a*, *var.*)

Erotylus elevatus, Fabr. Syst. Eleuth. ii. p. 4; Lac. Monogr. Erotyl. p. 459 [1].
Cypherotylus elevatus, Crotch, Cist. Ent. i. p. 538 [2].

Hab. PANAMA, Caldera in Chiriqui (*Champion*).—COLOMBIA, Bogota [2]; GUIANA, Cayenne [1 2].

Var.? Elytris subalbidis, punctis minus variolosis.

Hab. PANAMA, Bugaba (*Champion*).

One specimen only from each locality.

5. **Cypherotylus impressopunctatus.** (Tab. VI. fig. 5, ♂.)

Cypherotylus impressopunctatus, Crotch, Cist. Ent. i. pp. 148 [2], 540 [2].

Hab. NICARAGUA, Santo Domingo in Chontales (*Janson* [1 2], *Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

The male has the thorax more convex, and with the sides sinuate, and the base with deeper impressions; the front tibiæ slightly bent inwards close to their apices; the first two joints of the tarsi wide; and the basal segment of the abdomen with a patch of black pile in the middle. Many examples *.

* The following allied species appear to be undescribed :—

Cypherotylus patellatus.

Oblongus, niger, elytris alte carinatis, vix gibbosis, testaceis, punctis nigris ad apicem magis confluentibus et in seriebus subdigestis, apice tenuiter nigro. Long. 19–22 millim.

Hab. PERU (*coll. Gorham*).

Varies in the amount of black at the apex of the elytra. Distinct from *C. stillatus* or *C. impressopunctatus* by the much more acutely keeled ridge of the suture.

Cypherotylus anthracinus.

Niger, nitidus, elytris alte carinatis, subgibbosis, punctis magnis variolosis. Long. 20–21 millim.

Hab. PERU, Chanchamayo (*coll. Gorham*).

This is the only wholly black *Cypherotylus* known to me. In form it is similar to *C. patellatus*. Two specimens, apparently both females.

6. **Cypherotylus** ——?

Hab. NICARAGUA, Chontales (*Belt*).

An imperfect example of a distinct species allied to the Brazilian *C. apiatus*, but with the breast and the middle of the femora and a line on each side of the thorax reddish-yellow.

Section III. *Elytra evenly convex, the suture not keeled.*

7. **Cypherotylus vicinus.** (Tab. V. fig. 24, ♂.)

Erotylus vicinus, Guérin-Ménev. Rev. Zool. 1841, p. 116 [1]; Lac. Monogr. Erotyl. p. 465 [2].
Cypherotylus vicinus, Crotch, Cist. Ent. i. p. 539 [3].
Erotylus melanostigma, Lac. loc. cit. p. 466 [4].
Cypherotylus Jansoni, Crotch, loc. cit. pp. 149 [5], 539 [6].

Hab. MEXICO [1 2 3 4], Yucatan [2]; GUATEMALA [3], Cubilguitz in Vera Paz (*Champion*); NICARAGUA, Santo Domingo in Chontales (*Janson* [5 6]).

C. jansoni, Crotch, differs in nothing from *C. vicinus* but in the more reduced black elytral spots, which in the present species often form an interrupted oblique fascia; and both are so very nearly allied to the Colombian *C. goryi* that I see no more important distinction than a further extension of the black fascia, so that its oblique disposition is lost. They are probably only local forms of one species.

We figure a male specimen from Cubilguitz.

8. **Cypherotylus guatemalæ.** (Tab. VI. fig. 6, ♂.)

Cypherotylus guatemalæ, Crotch, Cist. Ent. i. p. 540 [1].

"*C. vicino* proximus, convexior, thoracis lateribus anguste rufo-cinctis; elytris punctis nigris multo majoribus."

Hab. GUATEMALA [1], Las Mercedes, Cerro Zunil, Zapote, Mirandilla, San Gerónimo, Purula, Tactic, Coban, Sinanja (*Champion*).

The distinguishing character of this species is the narrow lateral rufous margin of the thorax. The elytra have their black markings, especially the apical one, more developed than in *C. vicinus*; but I do not see any difference in their convexity, and the size of the black punctures is very variable. The male characters are:—the widened front tarsi, thickened front femora, and pilose dot on the ventral basal segment; the thorax scarcely differs, and the front tibiæ are very little bent or compressed. A few examples were found in each locality.

9. **Cypherotylus costaricensis.** (Tab. VI. fig. 7, ♂.)

C. guatemalæ proxime affinis, oblongus, æqualiter convexus, niger, nitidus; elytris flavo-testaceis, basi, apice maculisque duabus medianis (oblique sitis, fere confluentibus) punctisque numerosis, nigris. Long. 22 millim.

Mas tarsorum articulis duobus primis latioribus, femoribus anticis parum incrassatis, segmento ventrali primo puncto piligero.

Hab. Costa Rica (*Van Patten*).

This insect scarcely differs from *C. guatemalæ*, excepting that the thorax is wholly black. In the male, however, there is a structural difference in the apex of the front tibiæ, this in *C. costaricensis* being grooved on the inner side for the reception of a small carina in the femoral groove, upon which the tibia closes.

Two specimens, both males.

10. **Cypherotylus gaumeri.** (Tab. VI. fig. 8, ♂.)

Breviter oblongus, postice ovatus, convexus, niger, nitidus; prothorace transverso, utrinque oblique foveolato; elytris testaceis, punctis impressis sat magnis, humeris, maculis duabus magnis, fasciam obliquam in medio fere interruptam formantibus, apice epipleurisque nigris; pedibus quatuor posticis corallino-annulatis. Long. 16 millim.

Mas femoribus anticis incrassatis, segmento primo ventrali puncto piligero.

Hab. Mexico, Temax in North Yucatan (*Gaumer*).

There is no known species with which this can be very well compared. The form is that of *C. boisduvali*, but no other species of that group with the hind femora ringed with red is known to me; the rings are similar to those of *C. annulipes*, though rather wider. The single specimen received is a male, and the thorax is wide and formed almost as in the male of *C. boisduvali*, but the elytra are shorter.

11. **Cypherotylus boisduvali.** (Tab. V. fig. 23, ♀.)

Erotylus Boisduvalii, Chevr. Col. Mex. Cent. i. fasc. 4, no. 90[1]; Lac. Monogr. Erotyl. p. 466[2].
Cypherotylus Boisduvalii, Crotch, Cist. Ent. i. p. 540[3].
Erotylus californicus, Lac. Monogr. Erotyl. p. 467[4]. (Var.)

Hab. North America, California[4].—Mexico[1 2 3], Puebla, Orizaba, Tlatingo, Parada, Chiapas (*Sallé*), Jalapa, Las Vigas (*Höge*); Guatemala, Calderas 6000 feet, San Gerónimo, Purula (*Champion*).

The elytra in this species are convex, even, with largish, not very numerous, black dots; their colour is ochraceous. The thorax is uneven, with two oblique foveæ on each side, and a deep transverse one at the base. The elytra are more firm in texture, and more shining than in the following two species; the suture is finely raised, but there is not a stria. We have received a large number of examples.

The true *C. boisduvali* does not occur in the United States; the species thus identified by Crotch (Trans. Am. Ent. Soc. iv. p. 358), is described below under the name of *C. aspersus*. The variety might perhaps be now restored to specific rank, but the number of examples in the collection before me is hardly sufficient to enable

me to decide the point. The thorax, nevertheless, is always more opaque in *C. californicus* (Lac.); and in the male the sides are very strongly rounded.

One specimen from Jalapa, which I refer to this variety, differs, however, so much from the usual form of it as greatly to invalidate these distinctions.

The figure is of a female specimen from Jalapa.

12. **Cypherotylus alutaceus.** (Tab. VI. fig. 10, ♂.)

Oblongus, parum convexus, niger, subopacus; elytris pallide flavis, punctis parvis, macula laterali epipleurisque nigris, stria suturali distincta. Long. 15–18 millim.

Mas tarsorum articulis duobus primis latioribus, femoribus parum incrassatis, segmento ventrali primo puncto piligero.

Hab. Mexico, Northern Sonora (*Morrison*).

This insect is perfectly distinct from *C. boisduvali*, and also from its variety *C. californicus* (Lac.). It is longer and the elytra are notably more depressed, so that the contour when observed laterally is much less arcuate. The surface of the elytra between the black dots is also sculptured with a fine irregular but alutaceous puncturing.

13. **Cypherotylus fenestratus.** (Tab. V. fig. 22, ♀.)

Oblongus, parum convexus, niger, subopacus; elytris pallide flavis, punctis numerosis (sæpe confluentibus), macula laterali epipleurisque nigris; prothorace aurantiaco, maculis duabus magnis, clathratis, nigris. Long. 14–17 millim.

Mas tarsorum anticorum articulis duobus primis latioribus, femoribus anticis parum incrassatis, segmento ventrali primo puncto piligero.

Hab. Mexico, Refugio, Ventanas in Durango (*Höge*).

Similar to *C. alutaceus* in form. On the elytra the black dots vary in depth and size, being more confluent in some examples than in others; the lateral spot is sometimes confused, and it is composed of three or four confluent dots only. The thorax in the male has its sides a little more rounded than in the female, in which sex the sides are nearly straight though narrowing towards the front; the disc is almost opaque; the black spots are slightly notched on their front and posterior sides, and in the single example from Ventanas this notch is so deep that they are almost divided. The prosternal process is edged with black. The elytra are very pale, almost whitish-yellow, and not shining, but are scarcely alutaceous, though faintly rugose between the black dots; the latter in some examples are so numerous as to form confluent patches, while in others they are nearly all distinct.

This distinct new species was discovered by Herr Höge during his second Mexican expedition; we have received fifteen specimens from Refugio and one from Ventanas.

14. **Cypherotylus aspersus.** (Tab. VI. fig. 9, ♀.)

Oblongus, antice posticeque acuminatus, niger, opacus; prothorace trapezoideo, lateribus fere rectis, antice angustato; elytris sordide ochraceis, pallidis, punctis numerosis impressis nigris (sæpe confluentibus, in serie duplici interdum positis). Long. 14–17 millim. ♀.

Hab. MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Santa Clara in Chihuahua (*Höge*).

Var. Elytris punctulis minus numerosis, lateribus macula nigra.

Cypherotylus Boisduvali, Crotch, Trans. Am. Ent. Soc. iv. p. 358[1] (nec Chevr., Lacord.).

Hab. NORTH AMERICA, Colorado[1] (*Snow, coll. Gorham*), New Mexico[1].

Very closely allied to *C. fenestratus*, but with the thorax black. Both species are at once separated from *C. boisduvali* by the depressed and apparently always soft elytra, by the small trapezoidal thorax, and by the whole insect being dull. I have not seen a male which I can refer to this species. The specimens from Colorado in my collection were received under the name *C. boisduvali*, but they are not referable to that species.

15. **Cypherotylus** —— ?

Hab. BRITISH HONDURAS, Cayo (*Blancaneaux*).

A single discoloured specimen of a *Cypherotylus* of a species unknown to me, and not matured when captured.

MICREROTYLUS.

Micrerotylus, Crotch, Cist. Ent. i. p. 541 (1876).

The species which Crotch took for his type of this species, viz. *M. gronovii* (Herbst), was placed by Lacordaire in *Brachysphenus*, in the section *Barytopus*, with other members of which, however, it has little connection. The six species included by Crotch have a very similar form and mode of pattern, and one or two are doubtfully distinct as species. There is nothing but general form and style of pattern to separate them generically from either *Brachysphenus* or *Erotylus*; and they approach very closely to some *Zonarii*, such as *Z. indicus*. They are all from Tropical South America, from the Amazons northwards, and one species occurs in Central America.

1. **Micrerotylus lunulatus.** (Tab. VI. fig. 13.)

Erotylus lunulatus, Oliv. Encycl. Méth. vi. p. 435 (1791).
Brachysphœnus (*Barytopus*) *lugubris*, Lac. Monogr. Erotyl. p. 383[1].
Micrerotylus lunulatus, Crotch, Cist. Ent. i. p. 541[2].

Hab. NICARAGUA, Chontales (*Belt*), Rio Acoyapo (*Janson*); PANAMA, Bugaba (*Champion*).—COLOMBIA[1 2]; GUIANA, Cayenne[2].

Not uncommon at Bugaba.

ZONARIUS.

Zonarius, Hope, Rev. Zool. 1841, p. 111 ; Lacordaire, Monogr. Erotyl. p. 468.

Zonarius is separated from *Erotylus* by very trifling differences of structure, and it is impossible to give any definite reason for its distinction from *Micrerotylus*. Yet there is a peculiarity of pattern and a similarity of form among the species which render its members easy of recognition as pertaining to a distinct natural group. About twenty species are known, all from Tropical South America and Central America, but not passing further north than Mexico.

1. **Zonarius cacicus.** (Tab. VI. fig. 14.)

Zonarius cacicus, Lac. Monogr. Erotyl. p. 474 [1] ; Crotch, Cist. Ent. i. p. 542.

Hab. Mexico, Jalapa, Misantla (*Höge*), San Andres Tuxtla, Toxpam (*Sallé*), Orizaba [1], Yucatan [1] ; Guatemala, Purula and Senahu in Vera Paz (*Champion*).

An example from Toxpam is figured.

2. **Zonarius zebra.**

Erotylus zebra, Fabr. Mant. Ins. i. p. 92 [1] ; Duponch. Monogr. Erotyl. p. 16, t. 1. f. 21.
Zonarius zebra, Lac. Monogr. Erotyl. p. 478 [2].
Zonarius quadrifasciatus, Crotch, Cist. Ent. i. p. 543 [3].
Zonarius guatemalæ, Crotch, loc. cit.[4]

Hab. Mexico [3], Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*) ; British Honduras, Belize (*Blancaneaux*) ; Guatemala [4], Zapote (*Champion*). — Colombia [2] ; Guiana [2], Cayenne [1 2] ; Ecuador, Quito [2] ; Trinidad (*coll. Gorham*).

A well-known and widely distributed species.

Z. quadrifasciatus is only a variety with the bands on the elytra rather narrow.

The specimens we have received from Zapote agree perhaps more nearly with *Z. jansoni* than with Crotch's type of *Z. guatemalæ* ; but serve to show that the formation of species on mere colour-varieties, especially when few specimens are available, leads to no settled result.

3. **Zonarius jansoni.** (Tab. VI. figg. 15, 16.)

Zonarius jansoni, Crotch, Cist. Ent. i. pp. 149 [1], 543.

Hab. Nicaragua, Santo Domingo in Chontales (*Janson* [1], *Belt*) ; Costa Rica, Cache (*Rogers*) ; Panama, Bugaba, Volcan de Chiriqui, David (*Champion*).

This insect is probably a local variety of *Z. zebra*. We have received an extensive series of specimens of *Z. jansoni* ; Mr. Champion met with it frequently on the Volcan de Chiriqui, up to an elevation of 4000 feet. These Chiriqui examples agree in having the anterior band interrupted so as to form an oblique oval spot on each

elytron, yet vary very much both in the width and form of the second band. Others from Costa Rica have this band very narrow and sometimes undulate, and these represent a distinct variety.

We figure two examples, one from Bugaba (fig. 15) and one from Cache (fig. 16).

SCAPHIDOMORPHUS.

Scaphidomorphus, Hope, Rev. Zool. 1841, p. 111; Chapuis, Gen. Col. xii. p. 66.
Scaphidomorphus (div. 1), Lacordaire, Monogr. Erotyl. p. 481.

Chapuis, adopting Erichson's name *Prepopharus* for the second and third divisions, restricts this genus to two large species which have their prosternum with a keel and the labium emarginate.

Crotch seems to have regarded these two species as forms of one variable insect; Gemminger and Harold, on the other hand, retain them as distinct. I have not seen specimens of *S. 5-punctatus* from Central America.

1. **Scaphidomorphus bosci.** (Tab. VI. fig. 11.)

Erotylus (*Scaphidomorphus*) *Boscii*, Guérin-Ménev. Rev. Zool. 1841, p. 117 [1].
Scaphidomorphus Boscii, Lac. Monogr. Erotyl. p. 482 [2].
Scaphidomorphus quinque-punctatus, Crotch, Cist. Ent. i. p. 545, var.[3]

Hab. PANAMA, Bugaba (*Champion*), Volcan de Chiriqui (*Ribbe*).—COLOMBIA [1] [2], Bogota [3]; GUIANA, Surinam [2]; ECUADOR; PERU.

This is a large and showy species, varying very considerably in size (one example from Chiriqui measuring only 13 millim., while others reach 20 millim. in length), and also in the dimensions of the red spots. The second spot is more or less divided, and in several specimens from Bogota (in Crotch's collection) forms only two small spots; in a singular variety in my own collection the internal one only of the two spots remains. The colour of the spots also varies from blood-red to pale yellow.

PREPOPHARUS.

Prepopharus, Erichson, in Wiegmann's Archiv für Naturg. 1847, i. p. 177; Chapuis, Gen. Col. xii. p. 67.
Scaphidomorphus, Lacordaire, Monogr. Erotyl. p. 484 (pars).

This genus includes the second and third divisions of *Scaphidomorphus* of Lacordaire. Eighteen species have been described. *Prepopharus* is peculiar to Tropical America, Mexico being the northern limit of the genus. The species have frequently an opaline reflection. The genus is evidently rather closely allied to *Zonarius*.

1. **Prepopharus duponcheli.** (Tab. VI. figg. 17, *var.*; 18.)

Erotylus Duponchelii, Chevr. Col. Mex. Cent. i. fasc. 4, no. 91 (1834)[1].
Scaphidomorphus Duponchelii, Lac. Monogr. Erotyl. p. 488[2]; Crotch, Cist. Ent. i. p. 546[3].
Prepopharus Duponchelii, Gemm. & Har. Cat. Col. xii. p. 3718.

Hab. Mexico[1 2 3], Cordova (*Höge*, *Sallé*), Toxpam, Orizaba, San Andres Tuxtla (*Sallé*); Guatemala, Cerro Zunil, Zapote, San Gerónimo, San Juan in Vera Paz, Panima (*Champion*); Costa Rica, Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui, Caldera (*Champion*).

This species is very variable, especially in the markings on the thorax: these normally consist of four black spots—a transverse one in front, just touching the margin, two lateral oblong ones, and a median one on the base—but these are varied, divided, and united in every conceivable way. In the Mexican examples the disc of the thorax is often dark, and the front and lateral margins yellow; but even then the disc shows some traces of the divisions between the typical spots. Many examples.

We figure a variety from San Andres Tuxtla and one (more typical) from Caldera.

2. **Prepopharus xanthomelas.** (Tab. VI. fig. 12.)

Scaphidomorphus xanthomelas, Crotch, Cist. Ent. i. pp. 150[1], 546.
Prepopharus xanthomelas, Gemm. & Har. Cat. Col. xii. p. 3718.

Hab. Nicaragua, Santo Domingo in Chontales (*Janson*[1], *Belt*); Costa Rica, Cache (*Rogers*).

3. **Prepopharus spilotus.** (Tab. VI. fig. 19.)

Oblongus, ovatus (elytris cordatis), convexus; antennis, femorum apicibus, tibiis, tarsis elytrorumque punctis in singulis sex (uno basilari, tribus in fasciam angulatam dispositis, duobus post medium obliquis), nigris; elytris punctato-striatis, ad apices lævibus. Long. 9 millim.

Hab. Panama, Bugaba (*Champion*).

This insect has very close relationship with some *Brachyspheni*; but from the scaphiform shape of the body beneath I think it belongs here. The striæ are somewhat gemellate, *i. e.* the second and third and the fourth and fifth, and these pairs approach at the apex; but at the base of the elytra the first (or sutural) stria unites with the second, and the third with the fourth.

Five specimens of this interesting species were captured by Mr. Champion.

PRIOTELUS.

Priotelus, Hope, Rev. Zool. 1841, p. 112; Lacordaire, Monogr. Erotyl. p. 493; Chapuis, Gen. Col. xii. p. 70; Crotch, Cist. Ent. i. p. 550.

Lacordaire included nine species in this genus, which is characterized by the thinness of the antennæ, and their comparative length—in this respect resembling, but often

surpassing, those of the *Scaphidomorphi* and *Prepophari*. The elytra are at the same time very parallel, and often have their apices truncate or even serrate, and are sometimes spotted with black in a peculiar manner. One or two of Lacordaire's species, as Crotch remarks, do not seem to belong to the genus; but Crotch has himself added fifteen species, very few of which I can recognize as *Prioteli*. A few have been described by Erichson and Kirsch. Altogether, of true *Prioteli*, about twenty species are described. They appear to be almost exclusively confined to the tropics of South America; but one species, originally described from Mexico, is distributed all over Central America, and, according to Lacordaire, extends its range to Colombia.

1. **Priotelus apiatus.** (Tab. VI. fig. 20.)

Erotylus apiatus, Chevr. Col. Mex. Cent. ii. fasc. 5, no. 122 (1835)[1].
Priotelus apiatus, Lac. Monogr. Erotyl. p. 498[2]; Crotch, Cist. Ent. i. p. 552[3].

Hab. MEXICO[1 3], Toxpam, Catemaco, Santecomapan (*Sallé*), Jalapa, Tapachula in Chiapas (*Höge*), Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS, R. Hondo (*Blancaneaux*); GUATEMALA, El Reposo, San Isidro, Zapote, Purula, Panima, San Juan in Vera Paz, Sabo (*Champion*); NICARAGUA, Chontales (*Belt*); COSTA RICA, Cache (*Rogers*); PANAMA, Bugaba (*Champion*).—COLOMBIA[2].

Numerous specimens of this species have been sent; these vary in length from seven to twelve millimetres. In most examples the thorax has two dots in front and one very small one immediately before the scutellum on the base; but in some, as in those from Chontales, it is spotless. *P. apiatus* is very like *P. tigrinipennis*, Lac., from Colombia; but differs from it in the apex of the elytra being entire, instead of being obliquely truncate. I have not seen examples of *P. apiatus* from south of the Isthmus of Panama, and its presence there is doubtful. An individual from El Reposo is figured.

HOMŒOTELUS.

Omoiotelus, Hope, Rev. Zool. 1841, p. 112; Chapuis, Gen. Col. xii. p. 71; Lacordaire, Monogr. Erotyl. p. 506.
Homœotelus, Erichson, in Wiegmann's Archiv für Naturg. 1847, i. p. 177; Crotch, Cist. Ent. i. pp. 150, 559.

Homœotelus, like *Priotelus*, is distinguished among the 'Erotylides' by its long, thin antennæ; but is separated from it by its more or less scaphiform body, acuminate in front and behind, and by the small head with small eyes.

The elytra are never spotted, but are red or dark with the margins and suture lighter; in one instance the suture is produced in the middle into a remarkable spine. Lacordaire enumerates nine species, but in Crotch's catalogue the number is brought up to twenty-two; and several others undescribed as yet are known to me. *Priotelus limbatus*, Crotch, from Guayaquil belongs here. The distribution is the same as that of *Priotelus*, but the species are more numerous. We have received four species from Central America.

Section A. *Elytris confuse punctato-striatis.*

1. **Homœotelus confusus.** (Tab. VI. fig. 21.)

Homœotelus confusus, Crotch, Cist. Ent. i. pp. 150, 559 [1].

"*H. testaceo* affinis, sed minor, magis depressus, regulariter ovatus, thorace scabro-punctato, scutello rufo, elytris haud flavo-marginatis, femoribus apice extus, tibiis tarsisque nigris. L. c. $5\frac{1}{2}$–$6\frac{1}{2}$ lin."

Hab. British Honduras (*Blancaneaux*); Guatemala [1], Cubilguitz in Vera Paz (*Champion*); Nicaragua (*Sallé*), Santo Domingo in Chontales (*Janson* [1], *Belt*); Costa Rica [1], Cache (*Rogers*); Panama, Bugaba, Volcan de Chiriqui, Tolé (*Champion*).

The numerous specimens now before me show that this species is not so nearly allied to *H. testaceus* as the above diagnosis would lead one to suppose. It is much more difficult to separate it satisfactorily from *H. umbonatus*, Lac., and *H. hepaticus*, Crotch. The colour is very variable, it being sometimes as dark as that of *H. umbonatus*; but the thorax has never more than faint shades in the place of the vittæ, and the scutellum is not dark as in *H. umbonatus*. The antennæ, however, in *H. confusus* are entirely black at their apices. Crotch alludes [1] to specimens from Venezuela which have the femora entirely yellow; these are not in his collection, and they may be specifically distinct. A specimen from Bugaba is figured.

Section B. *Elytris gemellato-striatis.*

2. **Homœotelus gemellatus.** (Tab. VI. fig. 22.)

Omoiotelus gemellatus, Lac. Monogr. Erotyl. p. 513 [1].
Homœotelus gemellatus, Crotch, Cist. Ent. i. p. 561 [2].

Hab. Guatemala, El Tumbador, Las Mercedes, San Isidro, Cerro Zunil, Zapote, Capetillo, Sabo in Vera Paz (*Champion*); Costa Rica (*Van Patten*), Rio Sucio, Cache, Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 3000 to 5000 feet (*Champion*).—South America, Colombia [1 2].

A great number of specimens of this insect have been sent; these show considerable disparity in size, and some difference in form and sculpture. The largest examples are those from Costa Rica, several of these being 14 millim. long, and the smallest are some from Capetillo (8 millim.). These latter very much resemble *H. jansoni*, but may be known from it by being less convex and with the margins of the elytra a little more reflexed, and also by the interstices of the striæ being flat and not so deeply and less thickly punctured.

Many of the larger examples have the elytra with an expanded production at the tips, but I cannot ascertain that this is a sexual distinction.

Lacordaire [1] also gives Mexico as a locality, but I have no doubt that his specimens from that country belong to the following species.

A specimen from Capetillo is figured.

3. **Homœotelus mexicanus.** (Tab. VI. figg. 23; 24, *var.*?)

Homœotelus mexicanus, Crotch, Cist. Ent. i. p. 561 [1].

"*H. gemellato* affinis, sed postice minus acuminatus, magis depressus, obsoletius punctato-striatus, interstitiis obsolete punctulatis, tibiisque nigris sat distinctus. L. 4–4½ lin."

Hab. MEXICO [1], Toxpam (*Sallé*); GUATEMALA, Sinanja in Vera Paz (*Champion*).

Var.? capite, prothorace elytrisque basi et lateribus pone medium nigro-piceis.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

The elytra are of a sordid pale yellow, with the suture darker, and the reflexed margin pale, the head and prothorax and body beneath being of a rufo-testaceous colour; the antennæ are black with the two basal joints clear red; and the femora are red, with their tips and the tibiæ and tarsi black. The specimens from Sinanja, two in number, agree precisely with the others, except that the series of punctures are a little more deeply impressed, and the interstices are more distinctly punctured. The example from Chiriqui, which we figure (fig. 24), is very different in colour, and should perhaps be considered a distinct species; but it agrees very closely in form and punctuation with others from Mexico.

Lacordaire did not (according to Crotch) distinguish this species from *H. gemellatus*, and it is therefore to this species rather than to *H. gemellatus* that his quotation—"des provinces orientales du Mexique," refers.

4. **Homœotelus jansoni.** (Tab. VI. fig. 25.)

Homœotelus Jansoni, Crotch, Cist. Ent. i. p. 150 [1].

"*H. mexicano* affinis, sed corpore abrupte ovato, antice posticeque magis acuminato, colore læte aurantiaco (scutello nigro), thorace longiore, antennis longioribus, interstitiisque elytrorum distinctius punctulatis facile distinguendus. L. c. 4¼ lin."

Hab. NICARAGUA, Santo Domingo in Chontales (*Janson* [1], *Belt*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Approaches very near to small specimens of *H. gemellatus*, but is certainly more convex and more acuminate before and behind, and the sculpture is rather coarser.

A specimen from Chontales is figured.

Fam. ENDOMYCHIDÆ.

The passage to the Endomychidæ from the Erotylidæ through *Homœotelus* seems natural enough, and some species of *Brachysphenus*, such as *B. festivus*, have quite the facies of the present group. The family, however, is concisely separated by the tarsi having one less apparent joint; while certain genera which have been admitted, part of which form the "Endomychidæ adsciti" of Gerstäcker, will here be treated as equally aberrant from both families, the foot-structure in these showing very important differences.

The genera of Endomychidæ inhabiting the New World are more differentiated from those of the East than is the case in the Erotylidæ. We altogether miss here any representative of the *Eumorphi* or *Spathomeles*, while *Corynomalus* is equally the special form of Tropical America, and the former accordingly form a subfamily unrepresented in our fauna.

The family is somewhat more specialized, but on the other hand its representatives are far inferior in number, both in genera and species, to the Erotylidæ. The Palæarctic and Nearctic zones and low Southern latitudes possess few and feeble forms; as a group, they are a tropical development of a peculiar type that has never been dominant, dependent on special circumstances for their existence, and therefore rare in nature.

The learned treatise by Dr. A. Gerstäcker in Wiegmann's Archiv für Naturg. xxiii. (1857) was followed by a more complete Monograph in 1858, which includes a most valuable contribution to insect-anatomy.

Subfam. *CORYNOMALIDES.*

CORYNOMALUS.

Corynomalus, Erichson, Archiv für Naturg. xiii. p. 181 (1847) and in Schomburgk's Reise. Guian. iii. p. 579; Guérin, Arch. ent. i. p. 263; Gerstäcker, Monogr. Endom. p. 143; Gorham, Endom. Recit. p. 14; Chapuis, Gen. des Col. xii. p. 81.

Amphix, Castelnau, Hist. Nat. Ins. Col. ii. p. 522.

About thirty species of this genus are known to me, chiefly from Tropical South America. A few pass the Isthmus of Panama northwards, but they are not common in our region; and but one species, and that an abnormal one, is found in Mexico, where, however, it is very common.

The larva of *Corynomalus discoideus* has been described by the late Dr. Chapuis (Gen. des Col. xii. p. 98).

1. **Corynomalus rufipennis.**

Corynomalus rufipennis, Gerst. in Wiegm. Archiv für Naturg. xxiii. 1. p. 235[1]; Monogr. Endom. p. 147, t. 2. fig. 8[2]; Gorham, Endom. Recit. p. 14[3].

Hab. NICARAGUA, Chontales (*Janson*).—COLOMBIA [1 2 3].

A single example only has been received from Central America.

2. **Corynomalus femoralis.**

Corynomalus femoralis (Dej.), Gerst. in Wiegm. Archiv für Naturg. xxiii. 1. p. 235[1]; Monogr. Endom. p. 148[2]; Gorham, Endom. Recit. p. 14[3].

Hab. PANAMA, Volcan de Chiriqui (*Trötsch*), Bugaba (*Champion*).—COLOMBIA, Bogota [1 2 3].

3. **Corynomalus auronitens.** (Tab. VII. fig. 1.)

Nitidissimus, piceus; antennis, femoribus tibiisque nigris; elytris valde convexis, gibbosis, auro-nitentibus, singulis seriebus quatuor punctorum irregularibus, externe confusis; tarsis pallide ferrugineis. Long. 8 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Pitchy-brown, very shining, with a golden lustre, the legs and antennæ black, the tarsi ferruginous. Head with a few very small punctures, the epistoma distinctly marked by a slightly curved line between the antennæ; labrum distinct and pubescent in front. Thorax twice as wide as long, the sides a little sinuate, contracted at the front angles, the latter prominent, the hind angles somewhat acute. Elytra strongly swollen, the margins and apex being rather retracted; with four series of irregular punctures which are almost geminate, and terminate behind the middle; the interstices are very smooth and flat, with a few small scattered punctures, the punctures behind the middle becoming more distinct though confused; the margins are very little expanded; and the apex is slightly produced, although from the convexity of the surface it is not visible when the insect is viewed from above.

4. **Corynomalus cinctus.** (Tab. VII. figg. 2, 3.)

Ægithus cinctus, Fabr. Syst. Eleuth. ii. p. 10 (1801)[1].
Erotylus cinctus, Schönh. Syn. Ins. ii. p. 328.
Eumorphus cinctus, var. ?, Hoffm. in Wiedem. Zool. Mag. i. 2, p. 74.
Corynomalus cinctus, Gerst. in Wiegm. Archiv für Naturg. xxiii. 1. p. 237; Monogr. Endom. p. 162[2]; Gorh. Endom. Recit. p. 14.

Hab. GUATEMALA [2]; COSTA RICA (*Sallé*); PANAMA, Bugaba, Volcan de Chiriqui, David, Caldera (*Champion*).—SOUTH AMERICA [1]; COLOMBIA [2]; VENEZUELA; GUIANA, Cayenne; PERU; TRINIDAD (*coll. Gorham*).

This insect is very abundant in Colombia, and is common at Bugaba and at Caldera;

it appears to be rarer further north. We have not received it from Guatemala; it is, however, recorded from there by Gerstäcker. In a variety from Venezuela the elytra are reticulated, having a longitudinal striga in addition to two fasciæ, the striga dividing the black of the disc into seven or more spots.

We figure a specimen of the type-form (fig. 2), and a male example of var. *b* of Gerstäcker (fig. 3), both from Caldera in Chiriqui.

5. **Corynomalus saturatus.** (Tab. VII. fig. 4.)

Piceus, prothoracis disco elytrisque saturatius nigro-piceis; antennis dilutius rufo-piceis, clava nigra; elytris disperse profunde punctatis; prothorace fortiter transverso. Long. 7 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 3000 feet, David (*Champion*).

This species is allied to *C. interruptus* and *C. cinctus*, but is smaller than average examples of either, and darker; the thorax is very short, and more than twice as wide as long; and the elytra are very deeply and sparsely impressed with large punctures which increase in size towards the margins. In one example the thorax and elytra are of a uniform pitchy-black, while in two others the suture and margins are pitchy-red. The interstices between the large punctures of the elytra are nearly smooth and are shining, but under a quarter-inch lens numerous minute punctures are visible. The underside is of the same pitchy colour as the thorax, and is shining and smooth, but with minute punctures.

Four specimens.

6. **Corynomalus castaneicolor.**

Castaneus vel ferrugineus, antennis, palpis pedibusque nigris, prothorace brevi transverso, elytris disperse punctatis. Long. $7\frac{1}{2}$–8 millim. ♂ ♀.

Mas tibiis intermediis apice interne exciso et incurvato.

Hab. NICARAGUA, Chontales (*Janson*, *Belt*).

Very like the South-American *C. lævigatus*, Gerst., and formerly referred by me to that species; but the Nicaraguan insect differs from it in the following particulars:—It is broader, with the margins a little more expanded; the thorax is wider, especially at the base; and the elytra are distinctly punctured. The coxæ, trochanters, and the extreme base of the thighs are yellow. A very considerable number of specimens of this species were collected by the late Mr. E. Janson at Chontales, and I have seen a few captured by Mr. Belt.

7. **Corynomalus dentatus.** (Tab. VII. figg. 5; 6, *var.*)

Erotylus dentatus, Fabr. Syst. Eleuth. ii. p. 7[1]; Lacord. Monogr. Erotyl. p. 516.

Corynomalus dentatus, Gerst. in Wiegm. Archiv für Naturg. xxiii. 1. p. 238[2]; Monogr. Endom. p. 166[3]; Gorh. Endom. Recit. p. 15[4].

Corynomalus pantherinus (Dej. ined.).

Hab. MEXICO, Playa Vicente, Santecomapan (*Sallé*), Cordova, Tapachula in Chiapas

(*Höge*); British Honduras, Belize, R. Hondo, R. Sarstoon (*Blancaneaux*); Guatemala, El Reposo, Cerro Zunil, Pantaleon, Zapote, Tamahu, Chacoj, Teleman, Panzos, San Juan in Vera Paz (*Champion*); Nicaragua [4], Chontales (*Janson*, *Belt*); Costa Rica (*Sallé*); Panama, Bugaba, Tolé (*Champion*).—South America [1]; Colombia, Bogota [2 3 4]; Amazons, Ega [4].

Widely dispersed and often abundant; Mr. Champion met with it in numbers at El Reposo.

C. dentatus has some claims to generic distinction, it being not only flatter than the other species of the genus, but the males have the first abdominal segment with a distinct carina.

The form which has the elytra with seven distinct spots is much commoner than that described by Gerstäcker as the type, of which indeed no example is contained in the large number of specimens now before me. Of the variety (fig. 6), which has the thoracic spots united, and the elytra black, with the margins, a single interrupted fascia, and the suture in the middle red, we have received three examples from El Reposo.

Fig. 5 is taken from a specimen from Belize.

ACINACES.

Acinaces, Gerstäcker, Monogr. Endom. p. 178 (1858).

Four species of this genus have been described by Gerstäcker, and no additional representative has been added since the publication of the Monograph; nor has any species hitherto been recorded from the northern continent, but one is found as far south as La Plata.

1. **Acinaces lebasi.** (Tab. VII. fig. 9.)

Corynomalus Lebasii, Dej. Cat. 3rd edit. p. 463 [1].
Acinaces Lebasii, Gerst. Monogr. p. 180, t. 2. f. 11 [2]; Gorh. Endom. Recit. p. 15 [3].

Hab. Panama, Bugaba (*Champion*).—Colombia [2 3], Cartagena [1].

From the State of Panama we have received a single specimen of this species, which we figure. Gerstäcker only figures the prosternum and mesosternum diagrammatically.

Subfam. *LYCOPERDINIDES.*

PHALANTHA.

Phalantha, Gerstäcker, Monogr. Endom. p. 202 (1858); Gorham, Endom. Recit. p. 17; Chapuis, Gen. des Col. xii. p. 108.

Phalantha is a genus remarkable among the Endomychidæ for its depressed form and

pallid hue, in these respects resembling the European genus *Dapsa*. The thorax is often curiously angled at the sides, and the elytra are rather cordate. Three species have been described, all from South America; Gerstäcker figures one, *P. exsanguis*, from Colombia; and Gorham figures a second, *P. variegata*, from the Amazons, and describes a third, *P. pictipennis*, from Pará.

We have now to record two new species from Central America.

1. **Phalantha championi.** (Tab. VII. fig. 7.)

Sordide testacea, crebre punctata, parcius pubescens; antennis articulis septimo, octavo et nono, prothorace vitta submarginali elytrisque maculis duabus, haud bene discretis, oblique sitis, nigris. Long. $5\frac{1}{2}$–6 millim.
Mas tibiis anticis denticulo parvo adjacente prope medium armatis.

Hab. PANAMA, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

Allied to the Amazonian *P. pictipennis*, Gorham, and resembling it in having the two apical joints of the antennæ pale and the three preceding them black; but differing in the angulation of the sides of the thorax and in the marking of the elytra. Head and thorax very closely and finely, the elytra less closely, but still thickly and confluently, punctured; basal joint of the antennæ stout, the second joint bead-shaped, the third half as long again as the fourth, this latter and the succeeding joints subequal and elongate, the apical joint compressed at the tip. Thorax rather wider than long; the sides slightly angulated a little before the middle, and again before the base acutely, so that the hind angles appear to be cut off. Elytra with the shoulders rather prominent, the middle appearing a little wider than the base (but only because the margin is a little expanded there), and from the middle rather suddenly narrowing towards the apex (this part is rather obtuse, but it cannot be termed truncate); the markings consist of two spots obliquely placed on each, the one nearer the suture being also nearer to the apex, and behind and outside the spots the surface is slightly infuscate, but the margins and apex remain of the ground-colour. The sides of the thorax are also infuscate. The hind tibiæ are sinuate, more distinctly so in the males.

A large series of this new species were obtained by Mr. Champion. This insect secretes itself in the dry rolled-up leaves of bananas.

2. **Phalantha intricata.** (Tab. VII. fig. 8.)

Brunneo-testacea, crebre fortiter punctata, parcius pubescens; antennis articulis septimo, octavo et nono, prothoracis lateribus elytrorumque humeris marginibus ante medium maculisque duabus (anteriore arcuata), interdum per lineam conjunctis, nigris; elytris ovatis, postice paullo angustatis. Long. 4–$4\frac{1}{2}$ millim.
Mas tibiis denticulo parvo paullo pone medium armatis.

Hab. BRITISH HONDURAS, R. Hondo (*Blancaneaux*); GUATEMALA, Cahabon in Vera Paz (*Champion*); PANAMA, David (*Champion*).

This species may be distinguished by its small size, dark brown colour, variegated elytra, and the close, but rather coarse, punctuation of the whole upper surface. It is

subject to a good deal of variation, the head and thorax being quite dark in the specimen from David, while in two examples from R. Hondo these parts are rusty-red with the sides alone of the latter blackish. The thorax is indistinctly margined; the sides are acutely angled about one third below the front, and from thence contracted towards the base; the disc is even, but strongly and very closely punctured. The elytra are oval, having scarcely any shoulders, and rather pointed behind: the central black mark is like an undulate fascia, and is united with the black margin, and sometimes (as in the example figured) by a line crossing it with the hinder indistinct black spot. The joints of the antennæ are all shorter than in *P. championi*, the basal ones ferruginous, the apical two always bright yellow.

EPIPOCUS.

Epipocus (Chevrolat, Dej. Cat. ed. 3, p. 463), Germar, Ersch & Gruber, Allgem. Encycl. d. Wissensch. Th. xxxix. p. 86 (1843); Leconte, Proc. Ac. Phil. vi. p. 358; Guérin, Arch. ent. i. p. 265; Gerstäcker, Monogr. Endom. p. 240; Chapuis, Gen. des Col. xii. p. 121.

Epipocus is a natural and well-defined genus, and, among the Endomychidæ, is the most characteristic of the Central-American fauna. Of fourteen described species but two are peculiar to the Southern continent, while six are known from districts north of the Rio Grande. Its distribution extends eastwards as far as Tennessee and Georgia, and it is therefore almost certain that several new species will be added from the vast districts of New Mexico and Texas. The unicolorous brown, and more pubescent, species are those from the northern region, while the two Colombian representatives are black. The Central-American species are intermediate between these forms.

Section I. *Body and elytra black.*

1. **Epipocus rufitarsis.**

Endomychus rufitarsis, Chevr. Col. Mex. Cent. ii. fasc. 5, no. 123 (1835) [1].
Epipocus rufitarsis, Gerst. Monogr. Endom. p. 243 [2]; Gorh. Endom. Recit. p. 21 [3].

Hab. Mexico [1 2 3], Cordova (*Höge*, *Sallé*), Toxpam (*Sallé*), Jalapa (*Höge*); Guatemala, Cerro Zunil, Capetillo, Senahu, San Juan in Vera Paz, Sinanja (*Champion*), Coban (*Conradt*); Costa Rica (*Van Patten*), Cache, Volcan de Irazu (*Rogers*).

Small specimens, such as two examples from Coban, which at the same time have a dense short pubescence, are duller than the average of larger examples, and are very like the South-American *E. fuliginosus*, Guér., which, however, may be distinguished by the apex of the abdomen being red. This latter species is very likely to occur in the State of Panama or Costa Rica.

Section II. *Body red or pitchy-red.*

A. *Elytra pitchy, margined with red.*

a. *Apex of the elytra truncate.*

2. **Epipocus figuratus.** (Tab. VII. fig. 10.)

Epipocus figuratus, Gerst. Monogr. Endom. p. 247, t. 3. f. 3[1].

Hab. MEXICO[1], Jalapa (*Höge*), Temax in North Yucatan (*Gaumer*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, San Juan and Panzos in Vera Paz (*Champion*).

This species and the following one, *E. bifidus*, are extremely hard to distinguish from each other. Apparently there is hardly any difference beyond the presence of a second lateral thoracic spot, this being wanting in *E. bifidus*. Gerstäcker did not know the female; and the figure he gives of the male would seem to be that of a specimen of *E. bifidus*. We have examples from several localities of the female of *E. figuratus*, which, in addition to having simple tibiæ, are rather broader, and have the apex less obliquely and less deeply truncate than in the male. The figure is of a male example from North Yucatan, where Gaumer obtained a series of specimens.

3. **Epipocus bifidus.**

Epipocus bifidus, Gerst. Monogr. Endom. p. 248[1] (t. 3. f. 3=*E. figuratus* ?).

Hab. NICARAGUA, Chontales (*Janson, Belt*); COSTA RICA[1].

The male has a very small denticle on the inner side of the front tibiæ, easily overlooked, as it is not seen unless the leg is well extended; the tibia is compressed from below this tooth to the apex. Three specimens.

4. **Epipocus cinctus.** (Tab. VII. fig. 11, ♂.)

Epipocus cinctus, Lec. Proc. Ac. Phil. vi. p. 358[1]; Gerst. Monogr. Endom. p. 246[2].

Hab. NORTH AMERICA, Texas[1 2].—MEXICO, Catemaco (*Sallé*), Jalapa (*Höge*).

Mexican specimens of this insect are labelled *E. figuratus* in Sallé's collection; these, however, are clearly referable to the *E. cinctus* of Gerstäcker. The present species resembles *E. bifidus* very closely, but it has the abdomen always dark, and often nearly black, excepting the margins of the segments and the apex; and the thorax has the central spots united, forming a broad letter **M**, and its disc is more deeply but less closely punctured than in *E. bifidus*.

I have referred examples of a species hardly differing from this from Guatemala to *E. mutilatus*, as they differ slightly; but it will be seen that I cannot at present regard them as actually distinct.

The specimen figured is a male from Catemaco.

5. **Epipocus mutilatus.**

Epipocus mutilatus, Gerst. Monogr. Endom. p. 249 [1].

Hab. North America, Texas [1].—Mexico, Vera Cruz [1]; Guatemala, Capetill (*Rodriguez*), Zapote, San Juan and Teleman in Vera Paz (*Champion*).

A difficult species to determine: the punctuation seems closer, and hence the whole insect is duller than its allies; the thorax is marked as in *E. cinctus*. The difficulty arises from the fact that Gerstäcker has described the species from female specimens only, in which sex the apex of the elytra is usually more straightly cut off than in the males. The colour of the abdomen is variable and of little value as a specific character. An example from Capetillo which I refer doubtfully to this species is a male; and I am inclined to think that *E. cinctus*, Lec., and *E. mutilatus*, Gerst., represent one and the same species.

b. *Apex of the elytra simple, rounded.*

6. **Epipocus tibialis.**

Endomichus tibialis, Chevr. Col. Mex. Cent. i. fasc. 4 (1834) [1].
Endomychus (*Epipocus*) *tibialis,* Chevr. Icon. Règne anim. p. 317, t. 50. f. 9 [2].
Epipocus tibialis, Gerst. Monogr. Endom. p. 251 [3].

Hab. Mexico [2 3], Orizaba (*Lesueur* [1]), Jalapa (*Höge*), Cordova, Toxpam, San Andres Tuxtla, Playa Vicente (*Sallé*), Teapa in Tabasco (*H. H. Smith*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Las Mercedes, Zapote, Capetillo, San Gerónimo, Sabo, Teleman, Chiacam, Senahu, San Juan in Vera Paz (*Champion*), Coban (*Conradt*).

This insect is very abundant in some places, as at Jalapa. Certain specimens from Zapote, Teleman, &c., have the abdomen entirely yellow, but in other respects so entirely agree with typical examples that I cannot regard them as distinct.

7. **Epipocus bivittatus.** (Tab. VII. fig. 12, ♂.)

Epipocus bivittatus, Gerst. Monogr. Endom. p. 253 [1]; Crotch, Trans. Am. Ent. Soc. 1873, p. 361 [2].

Hab. North America, Tennessee [1], South Carolina [2].—Mexico, Villa Lerdo in Durango, Jalapa (*Höge*), Cordova (*Sallé*), Temax in North Yucatan (*Gaumer*).

The identification of our insect with this species, which was only known to Gerstäcker by a single female example from Tennessee, is made with some hesitation; but the examples received agree more nearly with the description than with that of *Epipocus punctatus*, the chief discrepancy between our species and *E. bivittatus*, to which, however, I do not attach much importance, being that usually only the two basal joints of the antennæ and the apical one are red. It is also rather larger than one would expect, being from six to seven millimetres in length. A male example from Jalapa is

figured. This sex is only distinguishable from the female by the presence of a very minute denticle near the apex of the front tibia.

B. *Elytra unicolorous brown.*

a. *Apex of the elytra truncate.*

8. **Epipocus longicornis.**

Epipocus longicornis, Gerst. Monogr. Endom. p. 255 [1].

"Obscure ferrugineus, unicolor, antennis elongatis, basi apiceque exceptis nigro-piceis; elytris apice oblique truncatis, supra crebre punctatis, prope suturam longitudinaliter subcostatis. Long. lin. 3. ♀."

Hab. Mexico [1].

I have not seen any examples which I can refer to this species.

9. **Epipocus subcostatus.** (Tab. VII. fig. 13, ♂.)

Oblongus, brunneo-ferrugineus, breviter pubescens; antennis (articulis duobus primis apiceque exceptis), tibiarum basi et prothoracis maculis quatuor nigris; elytrorum apicibus oblique et arcuatim truncatis. Long. 11 millim. ♂ ♀.

Hab. Mexico, Cuernavaca, Yautepec in Morelos (*Höge*).

Oblong, pubescent; head very finely punctured; antennæ long, the third joint nearly equal to the fourth and fifth joints united, the two basal joints and the apical one (except at its base) yellow. Thorax not twice as wide as long; the sides parallel near the base, much rounded in to the front angles, especially in the female; the disc vaguely and deeply, the sides thickly and confusedly, punctured; the sulci curving inwards, very distinct and linear; a distinct round black dot on each side, and a less distinct and irregular blackish spot in the shallow fovea on each side of the middle. Scutellum punctured. Elytra very finely punctured, and with a short shining golden pubescence, their apex rather deeply excised. Legs unicolorous with the body, excepting that the bases of the tibiæ are black.

The males have an indistinct tooth or angular widening at one third from the apex of the front tibia.

One male from Cuernavaca, one female from Yautepec. The male specimen is figured.

10. **Epipocus unicolor.**

Epipocus unicolor, Horn, Trans. Am. Ent. Soc. 1870, p. 96 [1]; Crotch, Trans. Am. Ent. Soc. 1873, p. 361 [2]; Gorh. Endom. Recit. p. 21 [3].

Hab. North America, Arizona [2], Colorado [1 3].—Mexico, Northern Sonora (*Morrison*).

The small size (seven millimetres), unicolorous thorax and antennæ, and obliquely

truncate elytra distinguish this species. It is common in Northern Mexico and in the United States, west of the Rio Grande.

b. *Apex of the elytra rounded.*

11. **Epipocus binotatus.** (Tab. VII. fig. 14, ♂.)

Oblongus, parum ovatus, rufo-ferrugineus, parce pubescens; antennis (articulis duobus basalibus apiceque exceptis), tibiarum basi punctisque duobus prothoracis nigris; prothoracis disco vage, elytris crebre punctatis. Long. 7–10 millim. ♂ ♀.

Mas tibiis anticis denticulo parvo ante apicem armatis.

Hab. MEXICO, La Noria in Sinaloa, Chilpancingo in Guerrero, Zapotlan in Colima, Yautepec in Morelos, Mexico city, Cordova (*Höge*).

Head finely, the thorax distinctly and rather sparingly punctured, the disc of the latter very vaguely so. Antennæ black, with the two basal and the apical joints rusty-red, the second joint often infuscate in the middle. Elytra distinctly and thickly punctured, the punctures shallow; without trace of striæ or costation; the apex not truncate, but yet almost so, the sutural angle being rectangular and still more sharply so in the female. Legs of the colour of the body, with the bases of the tibiæ infuscate. Body beneath quite unicolorous, the breast smooth, the abdomen distinctly punctured.

This insect is obviously very closely allied to the following species, *E. mollicomus*. It appears to differ in some minor details, among which are the darker red colour, the entirely red apical joint of the antennæ, the golden colour of the pubescence, the subtruncate elytra, and the uniform red colour of the underside. From the evidence now before me it is clear there are many species of this group of the genus yet to be discovered, and closely allied; and I therefore think it advisable to describe the present insect under a fresh name, rather than to refer it to a species of which the types are not now in my possession, and with the description of which it does not quite accord. A male example from Yautepec is figured.

12. **Epipocus mollicomus.**

Epipocus mollicomus, Gorham, Trans. Ent. Soc. Lond. 1875, p. 15 [1].

Hab. MEXICO [1] (*Truqui, coll. Fry*).

13. **Epipocus brunneus.**

Brunneus, parcius pube concolore vestitus; prothorace crebrius fortiter, elytris subtiliter creberrime punctatis, his obsolete costatis, apice rotundato; antennis (articulo basali et apice extremo exceptis), prothoracis disco punctis duobus (♂) vel quatuor (♀) tibiarumque basi nigris. Long. 9–10 millim. ♂ ♀.

Hab. MEXICO, Presidio (*Forrer*).

Very close to *E. binotatus*, but apparently distinct. The difference in the number of the thoracic black dots may be accidental; but the much more finely punctured

elytra, and the thicker punctuation of both the thorax and elytra (especially the costation of the latter in the female), and other minor differences indicate, I think, a distinct species.

14. **Epipocus sallæi.** (Tab. VII. fig. 15.)

Epipocus Sallei (Guérin, ined., coll. Sallé).

Oblongus, elytris ovatis, piceus, nitidus, prothoracis elytrorumque marginibus modice explanatis et reflexis; antennarum articulo basali et apice, prothoracis lateribus, elytrorum macula parvula humerali, apiceque abdomine et pedibus rufo-ferrugineis, tibiis (apicibus exceptis) piceis. Long. 9–10 millim.

Hab. Mexico, Jacale (*Sallé*), Jalapa (*Höge*).

Head pitchy, the front, mouth, palpi, and the basal and two or three apical joints of the antennæ red. The latter nearly half as long as the body, their third joint elongate, nearly or quite equal to the fourth and fifth united, the ninth and tenth joints very little produced on the inner side; all the joints finely pubescent. Thorax transversely squarish, not deeply excavated in front, and with the anterior angles rather blunt, the surface pitchy-black, the sides broadly red, expanded, and nearly smooth, the disc obsoletely punctured, the basal sulci indistinct; on each side of the pitchy part of the disc is a tumid dark spot. Elytra much wider than the thorax, moderately convex, their margins a little expanded, the epipleuræ very wide at the base, their disc closely and very finely punctate; pitchy-black, a small portion of the margin at the shoulder and the apex red. Underside rufous, the breast and the base of the abdomen pitchy.

This insect will no doubt form the type of a new genus. It is allied to *Epipocus* by the elongate third joint of the antennæ, and by the form of the prosternum; but it has the appearance of an *Anidrytus*, and the epipleuræ are very wide and quite different to those of any other species of either genus. As the four specimens seem all to be females, I do not think *E. sallæi* should at present be separated.

ANIDRYTUS.

Anidrytus, Gerstäcker, Monogr. Endom. p. 256 (1858); Gorham, Endom. Recit. p. 21; Chapuis, Gen. des Col. xii. p. 122.

This genus is more numerous in species in the southern than in the northern continent of America, and is, so far as we know at present, confined to the tropics. The species are less pubescent than those of *Epipocus*, and are usually of a uniform black or chestnut-brown colour. They are found associated with fungoid growth on dead and fallen trees.

About twenty species have been described; they are, like those of *Epipocus*, closely allied to each other and hard to discriminate.

Section A. *Body ovate, moderately convex.*

1. **Anidrytus liquefactus.** (Tab. VII. fig. 16, ♂.)

Anidrytus liquefactus, Gorham, Endom. Recit. p. 47[1]; Proc. Zool. Soc. 1886, p. 160[2].

"Oblongus, elytris obovatis, rufo-piceis, nitidus, parcius punctatus; antennis articulis quatuor basalibus rufis. Long. lin. $3\frac{1}{2}$. ♂."

Hab. GUATEMALA, San Joaquin in Vera Paz (*Champion*); PANAMA, Bugaba (*Champion*). —COLOMBIA[1]; PERU[2] (*coll. Gorham*).

There are some slight differences between the single specimens captured by Mr. Champion, and between them and the type; but I do not consider these differences of sufficient importance to warrant me in describing them as new species. The example from Bugaba is a male, $8\frac{1}{2}$ millim. in length. It has the three basal joints of the antennæ of a clear red, the fourth joint pitchy in part, and the following joints black, the apical joint being very narrowly tipped with reddish-brown; the whole body and the legs and the elytra of a clear, almost lucid, chestnut-red inclining to pitchy; the punctuation distinct and rather thick, that on the disc of the thorax less close than at the sides; and the pubescence of the elytra golden-brown. In the specimen from San Joaquin, also a male, the fourth joint of the antennæ is less pitchy and even the fifth joint is partly rufous at its apex; and the elytra have a darker discoidal cloud, and even the disc of the thorax is faintly infuscate. The front tibiæ of the male in both specimens are curiously distorted, being angularly deflexed below their middles, and flattened and again reflexed upward close to the apex, so that they form a kind of spoon; there is, however, no internal tooth.

2. **Anidrytus nitidularius?**

Anidrytus nitidularius, Gerst. Monogr. Endom. p. 262[1].

Hab. MEXICO[1], Temax in North Yucatan (*Gaumer*).

Of this species, described by Gerstäcker from a single specimen in Dohrn's collection, I have not seen an authentic example. The single specimen obtained by Gaumer agrees well enough with the description, but it is a female; and the character given by Gerstäcker, viz. the semicircular emargination of the last ventral segment, may be that of the male sex. It is not present in our insect. The identification is therefore quite uncertain.

3. **Anidrytus nigropiceus.**

Late oblongo-ovatus, nigro-piceus, subnitidus, antennarum basi et apice, corpore subtus pedibusque dilutius piceis. Long. 7 millim. ♂.

Mas tibiis anticis intus fortiter late dentatis, ad dentem fossulatis, tibiis intermediis sinuatis.

Hab. PANAMA, Bugaba (*Champion*).

Deep pitchy-black above, pitchy-brown below. The five basal joints of the antennæ, the legs, the margins of the thorax and elytra pitchy, the latter shading off quite by degrees into the nearly black colour of the general surface. The whole insect is clothed with a short but thick greyish-brown pubescence. The thorax is twice as broad as long, very finely and closely punctured, with the basal sulci distinct, the punctures a little larger and not so close at the base between the sulci; the front angles are acute and prominent but deflexed; the hind angles are rectangular. The elytra are oblong-ovate, also very finely but distinctly punctured; the surface is shining, and the pubescence is only distinct at the sides and apex (being probably soon abraded); the punctuation is finer and more crowded at the sides; the margin is narrowly reflexed, and bears a few irregular impressions, but is without larger punctures. On the first ventral segment of one specimen there is a patch of golden hairs; but I do not observe it in the other, and it is probably not a sexual distinction in this genus. The apical or fifth segment has its margin bisinuate.

The antennæ are stout and rather short; the third joint is hardly longer than the fourth, this latter and the fifth being longer than wide; the sixth to the eighth joints are nearly bead-shaped; the apical joint is reddish-brown at the tip.

Allied to *A. nitidularius*, but apparently shorter and broader.

Two specimens, both males.

4. **Anidrytus contractus.** (Tab. VII. fig. 17, ♂.)

Anidrytus contractus, Gerst. Monogr. Endom. p. 263[1].

Hab. Costa Rica[1]; Panama, Bugaba (*Champion*).

Although I have not seen an authentic specimen of this species, which was only (so far as I am aware) known to Gerstäcker from the female type in the Berlin Museum, I have no doubt that the Bugaba insect, of which Mr. Champion collected ten examples, including the male sex, is identical with it. The males resemble the females; but have the front tibiæ slightly bent in their basal half, and from below the middle compressed and straight, forming a faint angle without any tooth on the inner margin.

A. contractus may be known by its short and very convex form and very transverse thorax; the third joint of the antennæ is hardly longer than the fourth, and the five apical joints only are black.

5. **Anidrytus dolosus.** (Tab. VII. fig. 18.)

Breviter ovatus, subtiliter punctatus, valde convexus, nitidus, rufo-ferrugineus; elytrorum disco (ultra medium juxta suturam) et antennarum articulis quinque ultimis nigris. Long. 6 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Extremely close to the species from Bugaba which I have identified with *A. con-*

tractus; but differing from it by the thorax being rather longer, and with its sides not so parallel at the base, and hence having the hind angles somewhat acute instead of rectangular. The head is very finely punctured, the thorax more deeply and distinctly so, evenly over the whole surface. The antennæ are short; the five terminal joints and the tip of the sixth joint jet-black. The elytra have a very sparse golden pubescence, which (as in *A. contractus*) probably soon wears off; their disc is black, but the apical third, however, is of the deep red colour of the body, and the basal and side-margins and humeral callus and scutellum are also red.

6. **Anidrytus —— ?**

Hab. GUATEMALA, San Joaquin in Vera Paz (*Champion*).

A single male example of an *Anidrytus* which I cannot at present determine. It is apparently near *A. plagiatus*, Gerst., and is rufous in colour; the last six joints of the antennæ are black; and the elytra have the disc of each infuscate, but with the suture and margins red. In size it is rather larger than the specimen from North Yucatan which I refer to *A. nitidularius*, measuring eight millimetres.

Section B. *Body subparallel, and not convex.*

7. **Anidrytus humilis.**

Anidrytus humilis, Gorham, Endom. Recit. p. 48[1]; Proc. Zool. Soc. 1886, p. 160[2].

Hab. NICARAGUA, Chontales (*Belt*[2], *Janson*[1]).

The male of this species has, in addition to the character mentioned in the original description, the hind tibiæ sinuate and slightly bent inwards at their apices, in the same manner as they are in the following species.

Two specimens, a male and a female.

8. **Anidrytus depressus.**

Oblongus, subparallelus, depressus, nitidus; prothorace crebre, elytris subrugose creberrime punctatis; ferrugineus, prothoracis disco, elytris macula basali plagiaque discoidali indeterminate nigro-piceis, antennis articulis sex ultimis nigris. Long. $7\frac{1}{2}$ millim. ♂.

Mas tibiis anticis dente acuto interne armatis, tibiis posticis sinuatis ad apicem incurvatis.

Hab. GUATEMALA, El Tumbador (*Champion*).

Head rusty-red, with a faint double impression between the eyes, sparingly and finely punctured. Antennæ with five joints pale rusty-red, the succeeding ones black, all rather pubescent. Thorax transverse, the disc sparingly, the hind angles more thickly and strongly punctured; the sides parallel at the base (in *A. humilis* they are a little contracted towards the front); the front angles widely, the margins very narrowly red, the disc pitchy. Elytra very thickly and confluently punctate, the punctures joining in irregular transverse rows, and being coarser and thicker towards the base and suture;

there is on each an indeterminate black spot touching the base, and the greater part of their disc is black, leaving the margins, the apex more widely, the suture, and a ring surrounding the black spot deep rusty-red. Legs and body beneath paler red.

This species is allied to *A. humilis*; it differs not only in colour, but in the puncturing and a little in the form of the thorax, which being less narrowed in front appears wider. The male characters are the same as in *A. humilis*.

A single specimen.

EPOPTERUS.

Epopterus (Dejean Cat. 3rd edit. p. 463), Erichson, in Wiegmann's Archiv für Naturg. 1847, i. p. 181; Gerstäcker, Monogr. Endom. p. 274; Gorham, Endom. Recit. p. 22, & P. Z. S. 1886, p. 160.

Epopterus is a Tropical-American genus, and is known to contain about twenty-five species; its representatives, however, unlike those of *Anidrytus*, present great beauty and variety in the pattern of their upper surface. The species of the first section bear a remarkable likeness in form to those of the European genus *Mycetophagus*. They are to be sought for in similar places and in similar substances to the *Anidryti*.

Section A. *Body oblong, of nearly even width before and behind.*

1. Epopterus ocellatus. (Tab. VII. fig. 19, var. *d*.)

Eumorphus ocellatus, Oliv. Ent. vi. p. 1067, t. 1. f. 6[1].
Epopterus ocellatus, Gerst. Monogr. Endom. p. 275[2]; Gorh. Endom. Recit. p. 22[3].

Hab. COLOMBIA; GUIANA, Cayenne[3]; BRAZIL[1 2 3].

Var. *b*. *Epopterus myops*, Guérin, Arch. Ent. i. p. 268[4].

Hab. PANAMA, David (*Champion*).—COLOMBIA[4].

Var. *d*. *Epopterus maculosus*, Reiche, MS.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); BRITISH HONDURAS (*Blancaneaux*); GUATEMALA, Cahabon, Cubilguitz (*Champion*); NICARAGUA[3], Chontales (*Belt*, *Janson*).

This insect is so widely distributed and is so variable that it is difficult to determine whether all the forms belong to one species. The richly coloured typical specimens from Colombia and Brazil have a very different aspect from the varieties which occur in our district; yet it appears to me impossible to separate them satisfactorily. The variety *d*, which seems to be rather common in Nicaragua, has four distinct thoracic spots, and the elytra yellow, with two basal spots, an interrupted fascia, an apical spot, and one common wedge-shaped one on the suture. Specimens from Guatemala agree with these, excepting in having the fascia not divided in the middle of each elytron. The variety *b*, which I have seen labelled "*myops*, Guérin," has two subapical spots

and the fascia very much reduced. All the forms agree in the general disposition of the markings, and nearly so in puncturing.

2. **Epopterus partitus.**

Epopterus partitus, Gerst. Monogr. p. 277 [1]; Gorh. Endom. Recit. p. 23 [2].

Hab. North America, Texas [1 2].—Mexico, Yucatan [1 2] (*Gaumer*).

Possibly this is another variety of *E. ocellatus*, to which it corresponds in its markings; it is, however, always darker yellow, less pubescent, broader, and less parallel. The district of its distribution is the northern limit of the genus.

3. **Epopterus comptus.** (Tab. VII. fig. 20, ♂.)

Oblongus, rufo-piceus, nitidus, antennarum basi pedibusque flavis, illis articulis sex ultimis nigris; prothorace transverso, lateribus sinuatis antice parum attenuatis, angulis posticis acutis, maculis tribus basalibus elongatis duabus anterioribus sæpe confluentibus et plagia laterali antice abbreviata nigris; elytris flavis vel ferrugineis, maculis duabus (una basilari, una subapicali) fasciaque lata utrinque valde undulata nigro-piceis, sutura postice parum infuscata. Long. 6 millim. ♂ ♀.

Hab. Nicaragua, Chontales (*Janson, Belt*).

Allied to *E. ocellatus*, but distinguished from any of the varieties of that species known to me by the marking of the thorax: the four transverse spots are, as it were, united by streaks to the base, with the addition of two on the front margin, which are often confluent, and have each an angular projection inwards, and one central basal one. The markings of the elytra are also different, as there are but one basal and one apical spot, the latter being large, and there is no spot on the suture; the suture is in some cases pitchy-red in the centre of the fascia. The elytra are more convex in the longitudinal direction than in the allied species, with the least appearance of pubescence at the margins and apex, very finely, but distinctly, punctured. The legs are rather long, entirely yellow; the male characters, as usual, not very pronounced.

There are four specimens of this insect collected by Janson and one by the late Mr. Belt before me, which do not vary among themselves to any extent. It is a species which will compare favourably for beauty with any in this genus.

A male specimen is figured.

4. **Epopterus scalaris.** (Tab. VII. fig. 21.)

Oblongus, latiusculus, niger, nitidus; capite, prothoracis macula quadrata ad angulum anticum, ramum postice emittente, elytrisque flavis, his sutura antice late, fascia mediana undulata, puncto subhumerali, apiceque nigris; abdomine versus apicem tarsisque flavescentibus. Long. $6\frac{1}{2}$–7 millim. ♂ ♀.

Mas tibiis anticis curvatis, ad apicem rectis, et compressis.

Hab. Nicaragua, Chontales (*Belt*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Head yellow, rather thickly punctured; antennæ black. Thorax smooth, sparsely and rather deeply punctate; the basal sulci sharp and clear, starting from triangular

fossæ at the base, fully twice as wide as long; the hinder angles right angles; the upperside is black, but the front angles are widely yellow, this yellow portion having a square projection parallel to the margin just outside the sulci. The elytra are orange-yellow, with the suture at the base widely, an undulate fascia (which looks as if composed of three oblong guttæ), a punctiform dot near the shoulder, and an oblong spot common to both elytra on the apex, black; behind the fascia there is an ill-defined pitchy spot on the suture. The underside and legs are black; but the sides and tip of the abdomen, the pro- and mesosterna, and the tarsi are reddish-yellow, and the epipleural margins of the elytra are yellow, with the extreme limb dark.

E. scalaris is allied to *E. tigrinus*, Gerst., and also rather closely to *E. testudinarius*, Gorh. It is wider and more convex than the latter, and is distinguished from both by the black legs, the wholly black antennæ, &c.

A good many specimens were found by Mr. Champion at Bugaba, from one of which the figure is drawn.

Section B. *Body ovate, the thorax more or less narrowed in front.*

5. **Epopterus pantherinus.** (Tab. VII. fig. 22.)

Late oblongo-ovatus, fortiter convexus, crebre subtiliter punctatus, nitidus, dilute piceus; prothoracis margine antico in medio, limbo laterali infra medium, et basali tenuiter nigris; elytris nigro-reticulatis, macula humerali triramosa, duabus medianis, tribus apicalibus sat magnis, nigro-cinctis, pallide flavis; scutello, antennis (articulis duobus primis exceptis) et tibiarum basi, nigris. Long. $5\frac{1}{4}$–6 millim.

Hab. Panama, Bugaba, David (*Champion*).

This beautiful species is easily distinguished from any other in our district by its convex oval form. In this respect, and also in the three-branched shoulder-mark, it exhibits some affinity with *E. ryei*, an Amazonian species figured in the 'Endomycici Recitati.' The three subapical spots are whitish in the specimen from Bugaba, and the two central ones are confluent in the single example from David. The entire limb of the elytra is very narrowly black.

EPHEBUS.

Ephebus, Gerstäcker, Monogr. Endom. p. 293 (1858); Gorham, Endom. Recit. p. 24; Chapuis, Gen. des Col. xii. p. 125.

Ephebus is chiefly distinguished from *Stenotarsus* by the absence of an impressed line inside the lateral margin of the thorax. Seven species have been described, all from Tropical South America.

1. **Ephebus piceus.** (Tab. VIII. fig. 1.)

Breviter oblongus, rufo-piceus, nitidus; antennis validis, nigris, articulis tribus basalibus rufis; capite minute, prothorace elytrisque parcius distincte, punctatis, his parce rufo-pilosis. Long. 3 millim.

Hab. Guatemala, Zapote (*Champion*).

Var.? (vel alterius sexus). Antennis paullo longioribus, articulis quatuor basalibus rufis.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*).

The short form, distinctly punctured thorax and elytra, stout antennæ with the club "connate," *i. e.* with the joints not laxly articulate, and the sides of the thorax very finely margined (without a band as in *Stenotarsus*), distinguish this species from the allied forms. It might be taken for a very small *Anidrytus*. The head is nearly smooth. The antennæ are about half as long as the body, their joints 3–5 very little longer than wide, the second, sixth, seventh, and eighth bead-shaped, the club hardly wider at its commencement than the eighth joint, but gradually increasing in width. The thorax is twice as wide as long, the sides considerably rounded in front, the hind angles a little acute, the sulci distinct and slightly arcuate, the punctures small but quite distinct. Scutellum faintly punctate. Elytra distinctly and evenly punctured, the punctuation obsolete on the apical third; there is a very fine, not deeply impressed, sutural stria.

This insect is, unlike other *Ephebi* I have seen, almost smooth. The example from Teleman only differs in the structure of the antennæ, and this is probably of sexual import only. There is only one specimen from each locality, and it would be perhaps impossible upon these to decide whether or not they are the sexes of one species. The example from Zapote is taken as the type.

2. **Ephebus chontalesianus.** (Tab. VIII. fig. 2.)

Oblongo-ovatus, ferrugineus, prothoracis disco parcius minute, lateribus præsertim ad angulos posticos crebre punctatis; elytris parcius rufo-pubescentibus; antennis nigris, articulis quatuor basalibus rufis. Long. 5 millim.

Hab. NICARAGUA, Chontales (*Janson*).

In this insect the antennæ have four joints clear rusty-red and the following ones black; it is thus clearly distinct from *E. cardinalis* or either of the species described by Gerstäcker. The antennal joints are all rather short, the third and fourth being equal, and each a little longer than the second, the fifth to the eighth not longer than wide, the club gradually widened and compact, the apical joint subquadrate. The thorax is depressed, the basal sulci short; the sides narrowing in front, nearly straight for three-quarters their length, then suddenly rounded in to the front angles, their edges a little reflexed; the excision for the head has a very fine marginal line. A single specimen.

SYSTÆCHEA.

Characteres plerumque ut in *Stenotarso*. Antennæ articulo tertio quam secundus vix longiore, quarto ad sextum his subæqualibus, octavo transverso; clava magna, laxe articulata. Palpi maxillares articulo ultimo subulato. Prosternum: processu latiusculo, apice sulcato-impresso. Mesosternum transversum. Pronotum transversum, tenuiter marginatum, sulcis basalibus leviter impressis, angulis anticis acutiusculis, modice productis.

I propose this new genus for two species evidently allied to *Stenotarsus*. The thorax is without a lateral impressed line, and is formed differently to that of any species of *Stenotarsus*; and neither it nor the elytra are so hairy as is usual in that genus. The puncturing of the elytra is deep, and of the irregular "stellate" type of *Stenotarsus*, while the bluish colour of their disc is peculiar.

1. **Systæchea cyanoptera.** (Tab. VII. fig. 24.)

Castaneo-rufa; antennis articulis quinque ultimis nigris; capite prothoraceque lævigatis, elytris nigro-cyaneis, sutura, margine lateralis, apiceque latius rufis, fortiter irregulariter punctatis, versus apicem pube aurea brevi vestitis. Long. $5\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Head and thorax chestnut-yellow, shining, very finely punctured; antennæ with six joints clear yellow, rather pubescent, the seventh infuscate, the following joints black, the club-joints subequal—the first obconic, the first and second slightly acuminate on the inner side. Thorax very narrowly margined, the margin a little reflexed. Scutellum red. Elytra oblong, the sides rather parallel, with scattered obsolete stellate punctures, the surface between the punctures very finely coriaceous; blue or bluish-violet, with the suture and entire margin, the apex more widely, red; a very soft, short, golden pubescence is visible, but is much denuded in one specimen. Underside wholly yellow.

2. **Systæchea championi.** (Tab. VIII. fig. 3.)

Fere hemisphæricus, rufo-ferrugineus; antennis articulis sex ultimis nigris; prothoracis disco basali, scutello elytrisque nigro-plumbeis, his sparse cano-pubescentibus, confertim minute punctatis, limbo laterali rufo. Long. $5\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

More orbiculate and shorter and wider than *S. cyanoptera*, and with the first two club-joints more sharply acuminate within. The thorax is much narrowed in front, and has the front angles depressed and acute, the margins very finely reflexed, the basal sulci linear and converging, the disc very finely and obsoletely punctate; the basal margin is gently bisinuate, the middle being faintly truncate, and it is not margined nor reflexed. Elytra fully half as wide again as the base of the thorax, in their middle clothed with a sparse, and apparently fasciate, grey pubescence; nearly black, with the margin very narrowly red, this colour continuing a little way up the suture at the apex. *S. championi* is a remarkably neatly made and compact insect, in form recalling *Corynomalus* or *Acinaces*, to which it is, perhaps, really allied; but the pubescent elytra and structure of the antennæ are more in accordance with the genus now proposed. We have, unfortunately, only received one specimen.

STENOTARSUS.

Stenotarsus, Perty, Del. Anim. Artic. Brasil. p. 112 (1833); Gerstäcker, Monogr. Endom. p. 298; Gorham, Endom. Recit. p. 24; Chapuis, Gen. des Col. xii. p. 127.

Stenotarsus is the largest genus in the Endomychidæ, the described species amounting to about seventy. They are generally distributed in the Tropics. The American representatives can usually be distinguished from those of Africa and the East by not having the punctures on the elytra arranged in striæ. Its species are more thickly pubescent than most of the family; they are usually of a rich brown or rusty-red colour, often clouded with black, but seldom spotted, and are only of medium or small size.

According to Mr. Champion, they are of similar habits to *Anidrytus* and *Epopterus*.

Section A. *Antennæ with the third to the seventh joints longer than broad.*

1. **Stenotarsus cordatus.** (Tab. VIII. fig. 4.)

Breviter ovatus, convexus, saturate rufo-ferrugineus; pectore abdominisque segmento primo, prothoracis disco, elytrorumque plagia discoidali indeterminata in singulis piceis; antennis basi rufis, articulis quatuor ultimis nigris. Long. 7 millim.

Hab. GUATEMALA, Teleman and Senahu in Vera Paz (*Champion*).

The form of this species is broadly ovate; the elytra are cordate, less convex than in *S. coccineus*. The head and thorax are very minutely punctured. The thorax has the disc shining and almost glabrous, the margin flat, wide, and scarcely narrowed behind; the sides are very much narrowed to the front angles from the hind angles, which are acute, and are also gently and evenly rounded. The elytra have the usual unequal puncturing, the larger irregular punctures being numerous on the sides and towards the apex; their margins are finely reflexed. The antennæ are rather long and thin, with a lax club, the first seven joints clear red; in the example from Teleman the third, fourth, and fifth joints are very little longer than wide, but in the one from Senahu these joints are much longer. The specimen from Senahu also has the legs longer, and the hinder pair of tibiæ a little bent; I have, therefore, doubts whether this is the male sex or a distinct species.

The length of the legs is a good specific character: I do not known any other species with them so formed. The male (?) from Senahu will be the type for this species.

2. **Stenotarsus orbicularis.**

Stenotarsus orbicularis, Gerst. Monogr. Endom. p. 322 [1]; Gorh. Endom. Recit. p. 25 [2].

Hab. GUATEMALA [1] [2], Teleman and Panzos in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui below 4000 feet (*Champion*).

The specimens which I assign to this species agree fairly well with Gerstäcker's description, and are distinct from any other known to me; I have not, however, ever seen an authenticated example of *S. orbicularis*. I will, therefore, give the characters

of the species before me:—The size is about that of *S. obtusus*, viz. six millimetres; the colour is rich rusty-red, almost blood-red; the elytra each with a long but ill-defined pitchy cloud, leaving the margins (widely at the base) and the suture red; the thorax is wide, much contracted in front, the margin flat and wide, a little narrowed behind, the sides rather strongly but evenly rounded; six joints at the base of the antennæ are red.

3. Stenotarsus obtusus.

Stenotarsus obtusus, Gerst. Monogr. Endom. p. 310[1].
Stenotarsus brevicollis, Erichs. in Schomb. Reisen in Brit.-Guiana, iii. p. 579[2] (nec Perty).

Hab. GUATEMALA, Sinanja in Vera Paz (*Champion*); PANAMA, Bugaba (*Champion*).—GUIANA[1 2], Cayenne.

The identification of this species is a little uncertain: I have not seen the type. Our specimen from Sinanja is slightly oblong, and has four joints at the apex of the antennæ black.

4. Stenotarsus nigricans.

Oblongo-ovatus, nigro-fuscus, nitidus, fulvo-pubescens; antennis rufis, articulis quatuor ultimis nigris; prothoracis margine laterali deplanato et paullo elevato, postice subangustato. Long. 5½–6 millim.

Hab. GUATEMALA, Teleman in Vera Paz (*Champion*).

The almost uniform dark fuscous colour separates this species from any other, except the Colombian *S. sericatus*, Gerst., in which the antennæ are wholly black. In *S. nigricans* the antennæ are dark red as far as the eighth joint; and the thorax is very finely, the elytra more distinctly and deeply, punctured. In an example from San Juan, which is apparently not specifically distinct, the head and thorax are rufopiceous, as well as the legs. *S. nigricans* is also allied to *S. rubicundus*, Gerst.; but the terminal joint of the antennæ is wholly black. It is a more oblong species than either *S. rubicundus* or *S. sericatus*.

5. Stenotarsus pilatei.

Stenotarsus Pilatei, Gorh. Endom. Recit. p. 53[1].

"Oblongus, rufus, cinereo-pubescens, antennis articulis quinque ultimis nigris, elytris confertim irregulariter punctatis disco infuscatis." Long. 5–6½ millim.

Hab. MEXICO, Yucatan[1]; BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Panzos, Teleman, and Chacoj in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*).

Specimens of an oblong, unicolorous species before me from several localities appear to present no important difference from the type of *S. pilatei*, with which I now compare them: four joints only at the apex of the antennæ are black; the size varies—the type of *S. pilatei* being of the smallest dimension; and the punctuation is strong. The faint cloud on the elytra of the type is hardly a character to be depended on, but is present in at least one of the Chontales and in some of the Guatemalan examples.

S. pilatei is very near to a *Stenotarsus* I have received from M. Chevrolat as *S. ovatulus*, Gerst.; but I do not place any reliance upon the authenticity of this name, as the specimens do not well accord with the description of *S. ovatulus*, the latter, moreover, being described from Brazil.

6. **Stenotarsus discipennis.** (Tab. VIII. fig. 5.)

Statura et summa affinitate *S. circumdati*, saturate rufus; antennarum clava, prothoracis disco, pectore elytrisque nigris, nitidis, his rufo-marginatis. Long. 6 millim.

Hab. GUATEMALA, Cerro Zunil, Capetillo (*Champion*); COSTA RICA (*Rogers*).

This species is very like *S. circumdatus*, Gerst.; but is less pubescent, and is at once distinguished by the five basal joints of the antennæ and the legs being red. The rufous parts are not orange-red as in *S. circumdatus*, but almost blood-red. The head and front angles of the thorax, and the underside of the latter, are of this colour; while the meso- and metasterna and the basal segment of the abdomen (except at its sides) are deep pitchy-black. The legs are rather long, and (with their tarsi) entirely red. The margin of the thorax and the proportions of the antennæ are as in *S. circumdatus*.

Three specimens.

7. **Stenotarsus circumdatus.** (Tab. VII. fig. 25.)

Stenotarsus circumdatus, Gerst. Monogr. Endom. p. 323[1]; Gorh. Endom. Recit. p. 25[2] (nec *S. globosus*, Guér.).

Hab. MEXICO, Jalapa[1 2] (*Höge*), Cordova (*Sallé*).

A very easily recognized species, if the black antennæ and legs and the red head and abdomen are noticed. The thorax is usually wholly black, but has sometimes the sides red in front.

8. **Stenotarsus globosus.** (Tab. VIII. fig. 6.)

Stenotarsus globosus, Guérin, Arch. Ent. i. p. 270[1]; Gorh. Endom. Recit. p. 25[2].

Hab. MEXICO[1 2], Playa Vicente (*Sallé*); GUATEMALA, Tactic in Vera Paz (*Champion*).

The specimens of *S. circumdatus* in Sallé's collection are labelled *S. globosus*. The latter, however, is quite distinct, as testified by Guérin's type, which I purchased with his other Endomychidæ. *S. globosus* is somewhat smaller than *S. circumdatus*; it is of a bright rusty-red; the thorax has the disc only black; the patch on the elytra consists of a roundish spot, not invading the apical third; and the legs are entirely red. We have received many specimens from Tactic.

9. **Stenotarsus thoracicus.**

Breviter ovatus, postice acuminatus, niger; capite, prothoracis angulis anticis, prosterno, abdomine (basi excepta) elytrorumque margine toto aurantiacis. Long. $4\frac{3}{4}$–5 millim.

Hab. MEXICO, Jalapa (*Höge*), Cordova, Toxpam (*Sallé*).

Very similar to *S. circumdatus*, but smaller; the head and thorax distinctly but closely punctured; the antennæ black; the marginal line of the sides of the thorax very lightly impressed, the margin flat or a little concave (as it is in *S. circumdatus*); the scutellum black; the elytra thickly clothed with depressed golden hairs, the margins and suture neatly defined with an even orange band; the abdomen yellow, excepting the middle of the basal segment; the legs black, including the tarsi, which are pitchy at least.

An example of this species is labelled "*Stenotarsus thoracicus*, Guér., type," in the Sallé collection; it is, no doubt, distinct from *S. circumdatus*.

10. **Stenotarsus tarsalis.**

S. thoracico summa affinitate, antennis articulis duobus, scutello tarsisque rufis, elytris distinctius pubescentibus. Long. 5 millim.

Mas femoribus posticis minute dentatis.

Hab. MEXICO, Jalapa (*Höge*), Cordova (*Sallé*).

This species is extremely close to both *S. circumdatus* and *S. thoracicus*; from the former the red angles to the thorax and smaller size, from the latter the red tarsi, and from both the red scutellum, appear to separate it; and it is more probable that there are several closely allied species than that they vary in such points as these. It is, however, labelled *S. circumdatus* in the Sallé collection; one example from Jalapa has a pitchy scutellum. The toothing of the femora in the male is similar to that of *S. rubrocinctus*; I have not at present observed this character in the other allied species.

11. **Stenotarsus rubrocinctus.**

Stenotarsus rubrocinctus, Gerst. Monogr. Endom. p. 324[1]; Gorh. Endom. Recit. p. 25[2].

Hab. MEXICO [1 2], San Andres Tuxtla, Playa Vicente (*Sallé*).

The insect which I refer at present with some doubt to this species differs from Gerstäcker's description in having the scutellum red; it must, however, be very close to, if not identical with, *S. rubrocinctus*, and is easily known from its near allies by the red legs, and by the antennæ being yellow, with the exception of the four terminal joints. In one example before me the teeth on the hind femora are quite distinct.

12. **Stenotarsus militaris.**

Stenotarsus militaris, Gerst. Monogr. Endom. p. 325[1]; Gorh. Endom. Recit. p. 25[2].

Hab. MEXICO [1 2], Jalapa (*Höge*), Cordova, Playa Vicente (*Sallé*).

S. militaris may be distinguished from the other similarly coloured species by its oblong form and rather acuminate elytra, as well as by the rather distinct but irregular

punctuation of the latter. The example from Playa Vicente is very small, viz. five millimetres; but can hardly be distinct from those from Cordova in Sallé's collection, which are almost six millimetres in length.

13. **Stenotarsus oblongulus.** (Tab. VIII. fig. 7.)

Oblongo-ovatus, densius fulvo-pubescens, sublævis, nitidus, rufus; antennis (articulis duobus basalibus exceptis) nigris; prothoracis macula discoidali, elytrorumque plagia, nigris. Long. 5 millim.

Hab. Guatemala, Capetillo (*Champion*).

Very close to *S. militaris*, but distinct from it by the antennæ having the two basal joints alone red, and the elytra scarcely punctured, the latter also a little less parallel at the sides, and having the apex less acuminate, being, in fact, evenly rounded there. These distinctions, though minute, are sufficient in this difficult genus to indicate a separate species. The metasternum and the middle of the basal segment of the abdomen are pitchy-black.

One specimen.

14. **Stenotarsus angustulus.** (Tab. VII. fig. 23.)

Stenotarsus angustulus, Gerst. Monogr. Endom. p. 327 [1]; Gorh. Endom. Recit. p. 26.

Hab. Mexico, Jalapa (*Höge*), Juquila (*Sallé*); Guatemala (*Salvin*), Capetillo, San Gerónimo (*Champion*).—South America, Rio Janeiro [1].

If I am right in referring the Central-American specimens to the species described by Gerstäcker, the range is extraordinary, and I have seen no examples from intermediate localities. The elongate-oval form, scarcely margined thorax, and (with the exception of the long antennæ, of which five or six apical joints are black) the uniform ferruginous colour render this an easy species to recognize. The intermediate and hinder tibiæ are slightly bent (in the male?).

Many examples; we figure one from Jalapa.

15. **Stenotarsus panamanus.** (Tab. VIII. fig. 8.)

Oblongo-quadratus, parum ovatus, sanguineo-rufus; antennarum clava elytrisque nigris, his margine laterali tenuiter, humeris apiceque latius, rufis, pube brevi cupreo vestitis. Long. 6 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Head, thorax, and antennæ (excepting the club), and the whole body beneath, clear deep blood-red; front of the head subrostrate, being contracted in front of the insertion of the antennæ. Thorax twice as wide as long, with the lateral margins flattened and raised, narrowing towards the base; basal sulci deeply impressed but short. Scutellum red. Elytra oblong, with the humeral callus strongly raised, the disc thickly and confluently, the sides more deeply, punctured; the sides are nearly straight, but

narrow towards the apex; the colour is deep black, with the shoulders and apex widely red, the narrow reflexed margin at the sides being of the same colour.

Many specimens of this handsome *Stenotarsus* were obtained by Mr. Champion.

16. **Stenotarsus cuprivestis.**

Ovatus, valde convexus, castaneo-rufus; antennis articulis quinque ultimis nigris; elytris pube cupreo-micante vestitis, disco parum indeterminate adumbrato, fere lævigatis; prothoracis lateribus antice angustatis, margine laterali deplanato. Long. 4 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet (*Champion*).

Var. Elytris concoloribus.

Hab. PANAMA, Bugaba 1000 feet (*Champion*).

Antennæ with the six basal joints red, the tip of the sixth being more or less infuscate; the second joint as long as wide, the third to the eighth only a little longer. Thorax scarcely twice as wide as long at the base, and with its sides contracting to the front angles and very little bowed, the margin flattened but very little raised, and not narrowed behind. The elytra are somewhat evenly ovate, and clothed with a rather long coppery pubescence, which has a purplish tinge in certain lights; the punctuation is almost obsolete, the disc being nearly smooth, but towards the sides it is a little more distinct. The ovate, convex form, the colour of the pubescence, nearly uniform chestnut colour of the whole insect, the elytra being very faintly clouded upon the middle portion, and the very slightly arcuate sides of the thorax separate this species from any in its section known to me.

Many specimens.

17. **Stenotarsus lemniscatus.**

Breviter ovatus, subrotundatus, depressiusculus, saturate rufo-brunneus; antennis articulis sex ultimis nigris; prothoracis margine lato, leviter reflexo, postice parum angustato. Long. $3\frac{1}{2}$–4 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Among the species of the first section of this difficult genus this one may be recognized by its very small size and dark colour; and, if I am right in referring all the examples to one species, the male has the antennæ nearly as long as the whole body, thin, and with the joints succeeding the second gradually increasing in length, the seventh and eighth joints being twice as long as wide, the club long and very little widened. The specimens which I think to be the females are larger, and have shorter antennæ. The elytra are as wide as long in the smaller (male?) specimen, rather more expanded than in the more convex females. The pubescence in these latter is thick but silky, and golden in colour.

18. **Stenotarsus sallæi.**

Stenotarsus Sallei, Gorh. Endom. Recit. p. 25 [1], App. p. 62.

"Ovalis, ferrugineus, nitidus, pube cupreo-micante vestitus, thorace antice angustato, margine laterali deplanato, sulcis basalibus brevioribus fortius impressis, antennarum articulis sex ultimis nigro-fuscis." Long. 4–4½ millim.

Hab. MEXICO, Cordova, Toxpam (*Sallé*); GUATEMALA, Tactic, Sinanja, and Sabo in Vera Paz (*Champion*).

Oblong-ovate, of a uniform rusty-red colour (with the exception of the last six joints of the antennæ), rather thickly clothed with a short, soft, golden pubescence. The antennæ are about three-quarters the length of the body, with the third to the sixth joints clearly elongate; the club is not heavy, but is long and laxly jointed. The thorax is nearly smooth, and the puncturing of the elytra is close and fine. This is one of several species in Sallé's collection named and labelled by Guérin, but undescribed: *S. antennatus*, Guér., so named, does not differ, so far as I can see, from this species. *S. sallæi* was originally referred by me in error to Colombia [1].

19. **Stenotarsus adumbratus.**

Stenotarsus adumbratus, Gorh. Endom. Recit., App. p. 63 [1].

Oblongo-ovalis, rufo-brunneus, nitidus; antennis breviusculis, articulis quatuor ultimis nigris; prothoracis disco elytrisque indistincte infuscatis, fere lævibus. Long. 3½ millim.

Hab. GUATEMALA, Tactic in Vera Paz (*Champion*).—COLOMBIA, Sante Fé [1].

Smaller and less oblong than *S. sallæi*. The antennæ are shorter than in that species; joints 3–6 very little longer than wide, 7 and 8 bead-shaped, the latter transverse; the club has its first two joints at their apex rather wider than long. The thorax is transverse, not visibly punctate, the flat side-margin not narrowed behind nor much raised, the basal sulci short but deep. The elytra are very smooth, with only a few deep punctures about the shoulders and sides; the breast is slightly infuscate. The pubescence is short, rufous.

20. **Stenotarsus smithi.** (Tab. VIII. fig. 9.)

Breviter ovatus, elytris subcordatis, castaneo-rufus; antennis articulis quinque ultimis nigris; prothoracis disco infuscato, margine lato, postice vix angustato; elytris disperse haud profunde punctatis, breviter aureo-pilosis. Long. 2½ millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Antennæ about half as long as the body, with the first six joints clear red, and longer than wide, the seventh blackish, the remainder black, the first two club-joints not longer than wide. Thorax with the wide lateral margins well marked; the basal sulci deep and wide at the base; the sides not much curved (the anterior angles in consequence rather prominent), narrowing, however, towards the front; the disc is darker,

almost pitchy. The scutellum is obscure in tint, almost pitchy. The elytra have the apex a little recurved, and the margin there is contracted; the punctuation is vague, but distinct towards the shoulders, where a few large shallow punctures are visible. This is the smallest *Stenotarsus* I have seen; in general appearance it resembles a small *Rhymbus*. A single example only.

21. **Stenotarsus exiguus.**

Breviter oblongus, piceus vel nigro-piceus; antennis articulis quatuor ultimis nigris, articulis secundo ad octavum gradatim brevioribus; prothorace transverso, disco lævi, margine deplanato, antice latiore et elevato; elytris parcius punctatis et parce aureo-pilosis; tibiis et femoribus posticis nigricantibus. Long. 3 millim.

Hab. British Honduras, R. Hondo (*Blancaneaux*); Guatemala, San Juan and Teleman in Vera Paz (*Champion*).

Smaller than the Guatemalan example of *S. maculicollis* recorded in this work, and of a very dark pitchy-black colour, excepting the portions described here as black. The antennæ are much thinner than in that species, and the structure of the joints necessitates its being placed in a different section of the genus. The disc of the thorax is not nearly so much scooped out at the side adjoining the margin as in *S. maculicollis*; but still the margin is well defined and raised. The punctures on the elytra have a slight tendency to arrange themselves in longitudinal rows. The legs are very stout for the size of the insect.

Section B. *Antennæ with the third to the eighth joints not longer than wide, bead-shaped.*

22. **Stenotarsus claviger.** (Tab. VIII. fig. 10.)

Stenotarsus claviger, Gerst. Monogr. Endom. p. 331[1]; Gorh. Endom. Recit. p. 26.

Hab. Mexico, Cordova, Toxpam, Playa Vicente (*Sallé*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).—South America, Bahia [1], Santa Catarina [1].

Although in our specimens the pubescence is certainly coppery-red, rather than grey, as stated by Gerstäcker, I do not think they pertain to a different species. *S. claviger* is easily to be recognized by the antennæ having the joints preceding the club very short, the club itself as long as the rest taken together; the first eight joints are clear red; the club is black, and its terminal joint is twice as long as the ninth or first club-joint. This insect is labelled "*Stenotarsus* (s. g. *Ephebus*) *antennatus*," Guér. (type), in Sallé's collection. It is, however, not an *Ephebus*.

There are three specimens from Mexico and six from Chiriqui in our collection.

23. **Stenotarsus maculicollis.** (Tab. VIII. fig. 11.)

Stenotarsus maculicollis, Gerst. Monogr. Endom. p. 333[1]; Gorh. Endom. Recit. p. 26.

Hab. Guatemala, Zapote (*Champion*).—South America, Pernambuco [1].

The small size, almost quadrate form, and colour render this insect easy to recognize, there being so few of the section to which it belongs with short joints to the funiculus of the antennæ. The wide raised margin of the thorax and the sparse deep punctuation of the elytra are characters unusual in New-World *Stenotarsi*.

With the exception of the one from Guatemala, I have never seen any other example of this species than the type, which is now in the possession of Mr. G. Lewis.

The following two species, represented by single examples only, are apparently distinct from any of the foregoing; but they are not in a sufficiently good condition to make it desirable to describe them, and, at the best, are very obscure and difficult insects to deal with.

24. **Stenotarsus —— ?**

Hab. Panama, Volcan de Chiriqui (*Champion*).

A small species about the size of small *S. adumbratus*, but more oblong, and with the terminal joint of the antennæ red.

25. **Stenotarsus —— ?**

Hab. Panama (*Boucard*).

Another small species, with bead-shaped short joints to the base of the antennæ; allied to *S. maculicollis*, but smaller, and with unicolorous dark brown elytra.

RHYMBUS.

Rhymbus, Gerstäcker, Monogr. Endom. p. 347 (1858); Gorham, Endom. Recit. p. 27.
Bystus, Guérin, in Thomson's Archives Ent. i. p. 270.

Rhymbus is a genus which approaches the Coccinellidæ in its hemispherical form, but is properly associated with the present family. The tarsi are more filiform than in the genera we have hitherto been treating of, but do not differ essentially from the Endomychidous type, *i. e.* they are four-jointed, with the first two joints produced beneath, and the apparent long claw-joint with a suture near the base. The antennæ have nine or ten joints; their structure is very like that of *Panomæa*, an eastern genus in which the joints are also sometimes reduced in number. About ten species of *Rhymbus* are known to me, all from the New World.

Section A. *Antennæ nine-jointed.*

1. **Rhymbus limbatus.** (Tab. VIII. fig. 12.)

Rhymbus limbatus, Gorh. Endom. Recit., App. p. 63[1].

Rotundatus, fere hemisphæricus, nigro-piceus, nitidus, breviter fulvo-pubescens; capite, antennarum basi,

prothoracis marginibus pedibusque dilutioribus rufo-piceis; elytris ferrugineis, plagia magna discoïdali nigra, distincte crebre punctatis. Long. 4 millim.

Hab. Mexico [1], Cordova, Toxpam (*Sallé*), Jalapa, Esperanza (*Höge*).

This insect is labelled *Bystus limbatus* by Guérin in Sallé's and other collections, but is not described in the 'Archives Entomologiques.' The *Stenotarsus limbatus* of that work appears to refer to some different insect which it is impossible now to identify.

2. Rhymbus hemisphæricus.

Rhymbus hemisphæricus, Gerst. Monogr. Endom. p. 349, t. 3. f. 6 [1]; Gorh. Endom. Recit. p. 27 [2].

Hab. Mexico (*Truqui, coll. Fry*), Toxpam (*Sallé*), Acapulco in Guerrero (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, San Gerónimo and Panzos in Vera Paz (*Champion*); Costa Rica [1 2]; Panama, Volcan de Chiriqui, Caldera (*Champion*).

The specimens from Guatemala, which I refer rather doubtfully to this species, are smaller than typical ones, and have the tip of the apical joint of their antennæ reddish, but there are one two from Toxpam in Mexico which agree with them. The colour of the apical joint may be only a sexual character, and can hardly be relied upon, and some specimens have it pitchy-red. The punctuation is a better character, and in this species it is close and fine, but distinct. Most of the examples from the Volcan de Chiriqui are very dark, almost pitchy in colour, and some of them have the punctuation deeper and more confluent; probably this is a sexual character.

3. Rhymbus apicalis.

Rhymbus apicalis, Gerst. Monogr. Endom. p. 350 [1]; Gorh. Endom. Recit. p. 27 [2].

Hab. Mexico [1 2] (*Truqui, coll. Fry*); Guatemala, Zapote (*Champion*).

Two specimens obtained by Mr. Champion at Zapote have the apical joint of the antennæ clear red, but otherwise agree with the larger specimens of *R. hemisphæricus* from Toxpam.

I think it is very probable that *R. apicalis*, which was described by Gerstäcker from a female specimen, is only that sex of *R. hemisphæricus*. This point, and whether there are more than one species with similarly coloured antennæ, can hardly be determined except by close observation in those localities where the species occurs.

4. Rhymbus piceus. (Tab. VIII. fig. 13.)

Rotundatus, fere hemisphæricus, saturate brunneus vel rufo-piceus, breviter sed dense aureo-pilosus; elytris perspicue et subconfluenter punctatis; antennis, clava nigrescente, basi dilutioribus. Long. 3 millim.

Hab. Panama, Volcan de Chiriqui, Caldera (*Champion*).

Of the same size as the smaller specimens referred to *R. hemisphæricus*, but of a dark pitchy-red colour, the legs and antennæ partaking of the same pitchy tint. The distin-

guishing character is, however, the rather deep and confluent puncturing of the elytra. The thorax is short and transverse, at the base more than twice as wide as long; the sulci are linear, and rather more arcuate than in *R. hemisphæricus*.

Eight specimens.

5. **Rhymbus pallidulus?**

? *Rhymbus pallidulus*, Gerst. Monogr. Endom. p. 351[1]; Gorh. Endom. Recit. p. 27.

Hab. British Honduras, Belize (*Blancaneaux*).—Brazil[1], Rio Janeiro.

In three specimens from Belize the antennæ have the club-joints shorter than in *R. hemisphæricus*, the punctuation of the elytra is very fine and close, and the thorax is short. The identification is, however, uncertain. The species appear very little differentiated and require revision.

Section B. *Antennæ ten-jointed.*

6. **Rhymbus fibulatus.**

Orbicularis, rufo-piceus, nitidus, sutura et marginibus indistincte dilutioribus; antennis capitis prothoracisque longitudine, clava valida, nigra, articulo ultimo oblongo, apice summo rufo; elytris creberrime minute sed distincte punctatis. Long. 2 millim.

Hab. Mexico, Toxpam (*Sallé*).

This little *Rhymbus* is very near to a species from Guiana, which I have described [Endom. Recit. p. 56] under the name *R. seminulum*; but it has the elytra less distinctly margined with yellow, and the punctuation much closer and finer; the pubescence is also very distinct in *R. fibulatus* and hoary. The antennæ are rather long, and have the last four joints with part of the preceding one black. The thorax is transverse, its sulci distinct, and a marginal line on the base between them.

Two specimens.

7. **Rhymbus vestitus.**

Orbicularis, rufo-piceus, nitidus, aureo-pilosus; antennis concoloribus, articulo ultimo subquadrato; prothorace transverso, sulcis basalibus latiusculis, extus carinatis; elytris vix perspicue punctatis. Long. $1\frac{3}{4}$ millim.

Hab. Panama, Volcan de Chiriqui 3000 feet (*Champion*).

Easily distinguished from *R. fibulatus* by the shorter and less stout antennæ, and by their entire rufo-piceous colour. The sulci of the thorax are also wide depressions extending half across the thorax, edged on the outside with a short but somewhat plicate carina. The elytra are unicolorous, thickly clothed with a shining, pale golden, pilose pubescence. The thorax (in the single specimen obtained) is a very little deeper in colour than the elytra. The puncturing of the latter is very fine, requiring the microscope to see it.

EXYSMA.

Corpus orbiculare vel suborbiculare, parvum. Antennæ 10- vel 11-articulatæ; clava triarticulata, haud elongata, laxe articulata; articulis duobus basalibus validis, intermediis (sex) subquadratis, tertia haud elongata. Pronotum breve convexum, transversum, lateribus tenuiter reflexis; sulcis tenuibus, basi latius impressis. Prosternum latum, lanceolatum, punctatum. Elytris pubescentibus, punctatis. Sutura (*E. parvulæ*) stria leviter impressa, vel (*E. lævigatæ* &c.) estriata. Tarsi 4-articulati, filiformes. Palporum labialium articulis duobus ultimis latis trapeziformibus, maxillarium articulo ultimo subulato, apice subtruncato.

Exysma is apparently very near to *Mycetæa* and *Symbiotes*. I have described as belonging to the latter genus two very small species from Japan, which have also very close relationship with the small insects for which I now propose this new name. It would be difficult to assert in what essential particular these insects differ from *Symbiotes*; but it would be equally unsatisfactory to place them in that genus. The form is orbiculate, the antennæ much stouter, the thorax quite different in shape. I think it likely that the Japanese species alluded to may pertain to the genus, and that *Microxenus*, Wollaston, from the Cape of Good Hope, is a close ally.

Exysma is easily distinguished from *Dialexia* by the thorax having basal sulci, and by the superior number of joints in the antennæ.

A. *Antennæ eleven-jointed.*

1. Exysma parvula.

Breviter oblongo-ovalis, saturate ferruginea; elytris crebre distincte punctatis, stria suturali distincta, marginibus subexplanatis, parcius pilosis. Long. $1\frac{1}{4}$–$1\frac{1}{2}$ millim.

Hab. GUATEMALA, Capetillo (*Champion*).

Suborbiculate ovate. Antennæ short and rather stout, about as long as the thorax and head together; rusty-red, rather paler at the base and apex. Thorax transverse, narrower in front, convex, the sides a good deal rounded, the front and hind angles acute; the sulci deep and wide at the basal margin, plicate externally, continued as fine impressed lines to the front margin. The elytra are as wide as long; the widened margin is separated from the convex discoidal part by a rather evident sulcus, which commences outside the small humeral callus; upon the margin itself is a row of obsolete but larger punctures.

B. *Antennæ ten-jointed.*

2. Exysma lævigata.

Breviter rotundata, fere hemisphærica, ferruginea, parce pubescens, antennis pedibusque dilutioribus, prothorace minutissime punctulato, elytris lævigatis, stria suturali nulla. Long. vix ultra 1 millim.

Hab. MEXICO, Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*).

This little insect is allied to *E. parvula*, and is about the size of the smallest specimens of that species, but is more convex. The antennæ are of a clear ferruginous colour; the club is more compact than in that species, and the length of it is equal

to the rest of the antenna. The thorax is more contracted at its base, the hind angles appearing rectangular, so that the elytra are very clearly wider than the base of the thorax. The punctures are only visible under the microscope, and upon the elytra, although pitchy clots are to be seen, no punctures are visible. The legs and tarsi are pale rusty-red.

One specimen from Teapa, two from Toxpam.

3. **Exysma orbicularis.** (Tab. VIII. fig. 14.)

Orbicularis, badia ; antennis in medio infuscatis, clava laxe articulata. Long. 1 millim.

Hab. GUATEMALA (*Sallé*), El Tumbador (*Champion*).

There is one specimen from each of the above localities, differing from *E. lævigata* in having the antennæ longer, all the joints more loosely connected, the club longer, and the three or four joints preceding the apical one infuscate or at least darker than those at the base. The thorax appears to be a little more finely punctulate; but as regards this the series is too small to render the observation of much use.

4. **Exysma (?) tenuicornis.** (Tab. VIII. fig. 15.)

Oblongo-ovata, suborbiculata, castanea, tenuiter breviterque pilosa, perobsolete minute punctata; antennis pedibusque gracilibus, testaceis; prothoracis basi sinuata, medio lobato, lineis basalibus tenuissimis. Long. 1 millim.

Hab. GUATEMALA, Zapote (*Champion*).

About the same size as *E. orbicularis*, but more convex. The antennæ are very much thinner, and have the joints elongate; the basal joint is especially long and club-shaped, a little curved at the base; the second stout, but longer than wide; the form of the five succeeding joints thin (I am not able to state the number certainly); the apical three joints forming a long and very lax club; all the joints are pale testaceous-yellow. The thorax is deflexed in front, concealing the head, the sides are narrowly margined, and the margin a little reflexed; the fine sulci are short and converge; the hind angles are acute. The elytra at the base are rather wider than the thorax, very convex, a little pointed at their apex, and finely pilose; obsolete punctures surrounded by darker chestnut dots are visible all over their surface, with small points between them here and there; the margin is very fine, and has a very fine stria adjoining it; the suture is without stria.

A single specimen.

DIALEXIA.

Corpus breviter subglobosum, fere hemisphæricum, parvulum. Antennæ breves, novem-articulatæ; clava valida, triarticulata. Pronotum convexum, antice angustatum, lateribus leviter marginatis, basi sinuata, medio valde lobato, disco haud sulcato. Elytra convexa, perobsolete punctata, breviter pilosula, fere setulosa. Tarsi 4-articulati, articulo basali antico apice lobato-producto. Prosternum spathulatum, pone coxas leviter ampliatum, apice rotundato.

This name is proposed for some small species, which at first sight bear a very striking resemblance to the European genus *Alexia*. In reality they are not very closely allied. The structure of the antennæ is very different; *e. g.* in *Alexia* the sixth joint is widened and forms part of the club, and its apex furnishes a base for the seventh, whereas in the species of *Dialexia* it is of the same form as, and not wider than, those preceding it. The tarsi are formed on quite a different plan: in *Alexia* they are robust, the two basal joints are produced beneath, and the third is a very short and small joint easily distinguished from the somewhat thickened fourth or claw-joint; in *Dialexia* they are thin and long, and it is the basal joint only that is produced, while the third joint is with difficulty to be distinguished from the claw-joint. The shape of the thorax is also very different, the base in *Alexia* being straight.

I have not seen an example of any of the species from the United States referred by Dr. Horn and the late Mr. Crotch to *Alexia*, although one species described by myself as *Rhymbus minutus* is said by the former gentleman to be the same as *Alexia minor*, Crotch; this identification, however, requires corroboration, and under the circumstances there is no evidence that *Alexia* exists in the New World.

1. **Dialexia setulosa.** (Tab. VIII. fig. 16.)

Rotundata, fere hemisphærica, ferruginea, breviter pilosa, crebre subtiliter punctata, nitida; antennis brevibus, clava magna, nigra, laxe articulata, articulis præcedentibus superante. Long. 2 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Head rather broad; eyes moderate and round, somewhat prominent. Antennæ inserted close to the eyes; their basal joint very stout, longer than wide; the second stout but shorter, internally setulose; the third elongate subcylindrical, thickened a little towards the apex; the fourth, fifth, and sixth short and equal in width to the third at its apex; the two basal club-joints obconic, about as wide as long, the apical joint compressed and rather longer. Thorax convex, the sides much rounded, the shape nearly semicircular, pilose, and rather sparsely punctured; the sides margined, and the edge a little thickened and flattened. Scutellum distinct, triangular, faintly rugose. Elytra obsoletely punctured, the punctures not being deeply impressed, thickly pilose, the pile golden and shining; the margin not expanded, only just visible from above. Legs moderately long; their tarsi long, the hind pair three quarters the length of the tibiæ.

A single specimen.

The position of the following genera is uncertain. They agree in having the tarsi *apparently* four-jointed; but the structure of these joints varies in the different genera, and it is often very difficult to say whether a small additional joint at the base of, and connate with, the claw-joint does or does not exist. Such a joint is present in the Erotylidæ generally, and in the Endomychidæ it forms a true third joint.

Further remarks on the peculiarities of these genera will be found under each.

CREMNODES.

Cremnodes, Gerstäcker, Monogr. Endom. p. 412 (1858); Gorham, Endom. Recit. p. 27; Chapuis, Gen. des Col. xii. p. 129.
Catapotia, Thomson, Musée Scientifique, p. 13 (1860).

The characters of this genus have been set forth at great length by Gerstäcker; but although he has compared it with *Rhymbus*, and has admitted it among the Endomychidæ with better reason than Thomson had for placing it with the Nilionidæ, it must be confessed *Cremnodes* has no other affinity than general resemblance to *Rhymbus*, and that it is only a very superficial one which disappears on examination.

The antennæ are 11-jointed and very thin; the thorax is declivous, and formed like that of *Chilocorus*, without any trace of sulci; the elytra are very convex and glabrous, with very wide epipleuræ, having thus a really Coccinellid form.

The four-jointed tarsi, of which the joints are linear, the first three produced a little beneath the base of those succeeding them, are not unlike those of *Rhymbus*.

Thomson has taken very little notice of this important question, dismissing it with two words—"tarsi subæquales"—and in his figure showing five joints to the two front pairs, which is incorrect*. He concludes his description of *Catapotia* with these remarkable words, which one would have thought would have led their author to exclude the genus from his Monograph:—"*A nilio* æque *capite*, *oculis*, *antennis*, *palpis*, *mento*, *prothorace*, *prosterno*, *mesosterno*, *abdomine*, *coxis anticis*, *tarsisque* forma et dispositione maxime variat." The figure given (t. 2. f. 2) of the prosternum and its adjuncts, though beautifully executed, is no less unfortunate, for it is wholly incorrect and misleading:—the prosternum is smooth, and sutures or lines forming any such rhomboidal middle structure are imaginary; the front part is in fact not carinate, and the intercoxal process is evenly widened and spathulate, and overlaps the mesosternum, and is not received into a notch. Other details (as of the antennæ) are incorrect.

Cremnodes, so far as known to me, includes at present only three species—one from Brazil, one from Colombia (*cf.* Chapuis, *loc. cit.*), and the present one.

1. Cremnodes lævissima.

Catapotia lævissima, Thomson, Musée Scient. p. 14, t. 2. f. 2, &c., t. 4. f. 5 [1].

Hab. Mexico [1], Cordova (*Sallé*); Guatemala (*Champion*); Nicaragua, San Domingo in Chontales (*Janson*); Panama, Bugaba, Volcan de Chiriqui, Boquete (*Champion*).—Ecuador, Quito (*coll. Gorham*); Peru.

This insect might readily be taken for one of the Coccinellidæ; the four-jointed tarsi are not easily recognized as being such, and the antennæ, though thicker and more strongly clubbed than usual in that group, are not very different. The colour of the

* *Cf.* B. C.-A., Col. IV. pt. 1, p. 470.

Mexican and Panama specimens is usually shining ferruginous, the club of the antennæ being the only dark part; but the example from Chontales has the margin of the elytra pale yellow, and those from Peru in my collection have the suture, and the greater part of the thorax in addition, of the same pale colour, while one from Quito is nearly black, with the underside, legs, and base of the antennæ paler. I think, therefore, that this is a widely spread and variable species; it appears to be not uncommon where it occurs. According to Mr. Champion, it is found in fungi growing upon trees.

MICROPSEPHUS.

Corpus parvum, orbiculare, semiglobosum, glabrum. Tarsi quadriarticulati, filiformes, articulis tribus primis subtus apicibus productis, tertio breviore, articulo quarto longo; ungues simplices. Antennæ umdecim-articulatæ, articulis duobus primis validis, tertio ad octavum cylindricis, subæqualibus, inter se prope adjunctis, tribus ultimis clavam elongatam formantibus; clava valida, articulos sex præcedentes superans. Caput parvum; epistoma cum labrum clypeum quasi prebens, per lineam rectam bene indicata, labrum haud bene discretum. Oculi rotundati, minute granulati. Prothorax transversus, convexus, antice declivus, basi sinuato-lobata, linea recta transversa lobum separante. Elytra valde convexa, leviter marginata, epipleuræ latæ. Coxæ valde separatæ, processu prosternali lato deplanato. Pedes graciles.

I propose this name for a genus of which at present I have only seen one species, represented by three specimens—one from Mexico, the other two from Guatemala. These little insects remind one at first sight of the European *Aspidophorus orbiculatus*, to which in the size and outward form this species is very similar; but the resemblance is but superficial. Its real location is difficult, and it would, for anything I can see, be as appropriately placed in the Mycetophagidæ as anywhere else, if the structure of the tarsi be taken as of primary importance, and it is to be remembered that several authors place in that family *Symbiotes*, *Mycetæa*, and *Leiestes*.

The fact appears to be, however, that none of those genera are satisfactorily placed near *Mycetophagus*, in which the coxæ are very little separated and the antennal structure is very different.

1. **Micropsephus mniophilinus.** (Tab. VIII. fig. 17.)

Orbicularis, subglobosus, piceus, fere glaber; capite prothoraceque dilutioribus, interdum rufo-piceis, antennis pedibusque pallide rufis. Long. $1\frac{1}{2}$ millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Guatemala, Senahu in Vera Paz (*Champion*).

Pitchy-black, shining, nearly glabrous, the head and thorax more inclining to pitchy-red (in the two Senahu specimens they are entirely deep blood-red), the front part of the head with a few hairs (only visible under the microscope). Antennæ nearly as long as the thorax is wide, the club nearly half their length, the apical joint rather longer and wider than either of the others. Thorax nearly twice as broad as long, the anterior margin depressed, but not cut out for the head, not much narrowed in front; a basal, transverse, fine line reflexed at its ends so as to re-enter the base, marks off the ante-

scutellar lobe. Elytra punctured, but so finely as not easily to be seen except under the $\frac{1}{4}$-inch objective. One specimen from Teapa and two from Senahu, the latter apparently only differing in the more dilute coloration of the head and thorax.

Fam. COCCINELLIDÆ.

This Family is adopted as equivalent to the "Coccinellides" of Chapuis in vol. xii. of the 'Génera des Coléoptères,' and of Mulsant's 'Monographie des Coccinellides.' They are the "Coléoptères Trimères sécuripalpes" of Mulsant's first monographic work (published in 1850), and briefly the "Sécuripalpes" of the 'Histoire Naturelle des Coléoptères de France' (1846). The older authors, as Westwood, recognized the family, and placed them as they are in this work, as forming the third division of a larger group, the Pseudo-trimera, and as fitly terminating a lineal arrangement of the Coleoptera which was mainly founded on the tarsal system. It has been the fashion with some modern systematists to place this group as forming part of the Clavicorn Stirps.

Mulsant divided the family into two groups, the "Gymnosomides" and the "Trichosomides," from the more pubescent character of certain genera. Chapuis in the 'Génera' points out the difficulty and even confusion attending this method, as certain pubescent genera are still found in Mulsant's first section; and he proposes a division founded on a more important character—the form of the mandibles. He thus makes two tribes of equal value, the "Coccinellides aphidiphages" and the "Coccinellides phytophages,"—the latter tribe being nearly the same as the "Trichosomides" of Mulsant, but excluding the Scymnides, which are insectivorous.

In this work I shall, however, simply regard the subfamilies, which are equal to Mulsant's "Branches," as of co-ordinate value with the subfamilies of the preceding families, without attempting to unite them in larger groups. Mr. Crotch's system as it appears on pages xi–xv of his "Revision" was apparently left undeveloped, and is, even with Mr. R. F. Rippon's notes on page xv, unintelligible. His subfamilies were, however, adopted from Mulsant, but some are termed tribes and some groups.

The habits of the majority of the members of this family, and their aphis-devouring mode of life, both as larvæ and as perfect insects, have been so often described that it is not necessary to do more here than allude to the subject as one of great importance to the agriculturist and fruit-grower, and one that has recently only attracted the attention it merited. The "Scymnides" and their allies have long been noticed as invaluable in reducing the numbers of the *Phylloxera* and other plant-parasites. And quite lately by the introduction of certain species of "Rhizobiides" from Australia, the orange-growers of the United States have been able to clear their trees of scale, and have thus been enabled to combat successfully a threatened calamity.

The " Epilachnides," which are numerous in species and individuals in the fauna under investigation, are phytophagous, and remarkably different in their habits from the rest of the Coccinellidæ. Some of the species, according to Mr. Champion, are very abundant at times on cultivated Cucurbitaceous plants.

Subfam. *HIPPODAMIIDES.*

The Hippodamiides are an essentially northern group of the Coccinellidæ, and although one or two widely dispersed species extend in the New World as far south as the Straits of Magellan, I am not aware of any being found in the Eastern Tropics, Australia, or New Zealand, with one exception, *Hippodamia variegata*, Goeze, which from its wide distribution has reached India. They are characterized by their oblong depressed form, and by the absence, or nearly so, of the depressed spaces (called " plaques abdominales " by Mulsant) on the first ventral segment for the reception of the femora of the hinder pair of legs.

MEGILLA.

Megilla, Mulsant, Spec. Col. Trim. sécur. p. 24 (1850) ; Monogr. des Coccin. p. 16 (1866) ; Crotch, Rev. Coccin. p. 92 (1874).

Crotch [Trans. Am. Ent. Soc. iv. p. 365 (1873), and Rev. Coccin. p. 91] has separated three species, two under the generic name *Eumegilla* and one under that of *Ceratomegilla* ; as thus restricted *Megilla* consists of only three species, which are widely distributed in the New World, and are very variable.

1. **Megilla maculata.** (Tab. VIII. figg. 19, 20.)

Coccinella maculata, De Geer, Mém. Ins. v. p. 392, t. 16. f. 22 (1775) [1].
Megilla maculata, Muls. Spec. Col. Trim. sécur. p. 28 [2] ; Monogr. Coccin. p. 20 [3].
Chrysomela 10-*maculata,* Fabr. Syst. Ent. p. 105 [4].
Coccinella decemmaculata, Oliv. Ent. vi. no. 98, p. 1016, t. 3. f. 40 [5].
Coccinella limensis, Philippi, Stett. ent. Zeit. xxv. p. 402 [6].
Næmia fuscilabris, Muls. Monogr. Coccin. p. 22 [7].

Hab. North America [2 3], Canada, United States [2 3], Louisiana [2], New Orleans [7].—Mexico, Paso del Norte, Vera Cruz, San Juan Bautista in Tabasco (*Höge*), Teapa in Tabasco (*H. H. Smith*), San Blas, Presidio (*Forrer*), Etla, Tlacotalpam (*Sallé*) ; Guatemala [2], near the city, Dueñas, Panajachel, Paso Antonio, Teleman (*Champion*) ; Costa Rica, Rio Sucio, Volcan de Irazu (*Rogers*).—South America [2 3 5] ; Colombia ; Venezuela, Caracas [2] ; Trinidad [5] ; Guiana, Cayenne, Surinam [1 2] ; Amazons ; Peru, Lima [6] ; Chili [2 3] ; Antilles [5].

The figures represent two varieties of this species from Mexico: fig. 19 taken from

one from Paso del Norte on the United States frontier; fig. 20 is from one from Oaxaca.

Næmia fuscilabris, Muls., is a very small and poorly developed form of this species from New Orleans, and there are specimens of it from Canada in Crotch's collection. The locality given by Fabricius [4] is "America."

NÆMIA.

Næmia, Mulsant, Spec. Col. Trim. sécur. p. 30 (1850); Monogr. Coccin. p. 21; Crotch, Rev. Coccin. p. 92.

Mr. Crotch in his Revision of the Coccinellidæ of the United States [Trans. Am. Ent. Soc. 1873, pp. 364, 369] divided the species of this genus between *Megilla* and *Anisosticta*, apparently abandoning the character drawn from the claws.

1. **Næmia vittigera.** (Tab. VIII. fig. 21.)

Hippodamia vittigera, Mann. Bull. Mosc. xvi. p. 312 (1843) [1].
Coccinella (*Hippodamia*) *vittigera*, Guérin, Icon. du Règne Anim. iii. p. 332 [2].
Næmia vittigera, Muls. Spec. Col. Trim. sécur. p. 33 [3]; Monogr. Coccin. p. 23 [4]; Crotch, Rev. Coccin. p. 93 [5].
Megilla vittigera, Crotch, Trans. Am. Ent. Soc. 1873, p. 364 [6].

Hab. North America, Hudson's Bay [5], United States, California [1 2 3 4 5 6], Kansas [5 6], Colorado.—Mexico [2 3 4 5 6], Northern Sonora (*Morrison*), Durango city, Jalapa (*Höge*), Parada, Guanajuato, Puebla (*Sallé*), Mexico city (*Höge*, *H. H. Smith*).

Crotch remarks [5] that this curiously coloured species exactly resembles a common Californian *Galeruca*.

2. **Næmia seriata.** (Tab. VIII. fig. 18.)

Coccinella seriata, Melsh. Proc. Acad. Phil. iii. p. 177 [1].
Næmia seriata, Muls. Monogr. Coccin. p. 21 [2]; Crotch, Rev. Coccin. p. 92 [3].
Anisosticta seriata, Crotch, Trans. Am. Ent. Soc. 1873, p. 369 [4].
Næmia litigiosa, Muls. Spec. Col. Trim. sécur. p. 31 [5].

Hab. North America [2 3 5], Pennsylvania [1], Middle and Southern States [4].—Mexico [2 3 5], Vera Cruz (*Höge*, *Sallé*).—South America, Colombia [2 3 5].

HIPPODAMIA.

Hippodamia, Chevrolat, in Dejean's Catalogue, 3rd edit. p. 456 (1837); Mulsant, Hist. Nat. Col. de France, Sécurip. p. 30 (1846).

This genus, with which *Adonia*, Mulsant, is usually united, is a north-temperate form containing about eighteen species, divided almost evenly between the old and the

new worlds. One species only reaches Central America, where it is very abundant in the more elevated parts.

1. **Hippodamia convergens.** (Tab. VIII. figg. 22, 23, 24.)

Coccinella (*Hippodamia*) *convergens,* Guérin, Icon. du Règne Anim. iii. p. 321 [1]; Muls. Spec. Col. Trim. sécur. p. 22 [2]; Monogr. Coccin. p. 14 [3]; Crotch, Rev. Coccin. p. 96 [4]; Trans. Am. Ent. Soc. 1873, p. 367 [5].

Hab. NORTH AMERICA [1], United States [2 3 4 5], California [1 2 3 4].—MEXICO [1 2 3 4 5], Northern Sonora (*Morrison*), Pinos Altos in Chihuahua (*Buchan-Hepburn*), Alvarez Mountains, San Luis Potosi, Hacienda de Bleados, Guajuco in Nuevo Leon, Parras, Monclova and Saltillo in Coahuila (*Dr. Palmer*), Ventanas and Ciudad in Durango, Presidio de Mazatlan (*Forrer*), Tenango del Valle (*Richardson*), Durango city, Cholula in Puebla, Amecameca, Las Vigas, Jalapa, Teapa (*Höge*), Cordova, Etla, Guanajuato, Oaxaca, Yolos (*Sallé*), Orizaba (*H. H. Smith & F. D. Godman*); GUATEMALA (*Sallé*), Quiche Mountains 7000 to 9000 feet, Capetillo, Dueñas, Guatemala city (*Champion*); COSTA RICA (*Van Patten*).

Mulsant recognizes four varieties of this widely dispersed and sometimes very abundant species. Thus:—

Var. A. Elytra without spots.
Var. B. Elytra with the scutellar spot only.
Var. C. Elytra with a scutellar spot, and some spots in addition to the normal pattern.
Var. D. Elytra marked with black spots irregularly placed.

The var. B is rather common; we have seen it from Guanajuato, Oaxaca, Etla, Puebla, Cordova, Tenango del Valle, and Amecameca. But a variety in which the scutellar spot is wholly absent is not among the very numerous specimens that have come under my notice; nor have I seen varieties corresponding to vars. C or D, with more than the normal number of spots, that is to say three basal and three apical spots on each elytron besides the very small scutellar dash on the suture. Varieties in which one or all of the three basal spots are wanting or reduced to points are common.

Subfam. *COCCINELLIDES.*

This subfamily contains really only the two genera *Adalia* and *Coccinella*, for Mulsant's *Adonia* is by most authors now generally merged in *Hippodamia*, and the genus *Cisseis*, containing but one species, has been shown by Crotch to be a *Verania*. *Nesis*, Mulsant, has no character whereby it can be separated from the Halyziides, and *Bulæa* is only separable from *Coccinella* by having simple instead of "appendiculate" claws.

The only question now is whether it is worth while maintaining the Halyziides in a separate division, or as a subfamily at all.

ADALIA.

Adalia, Mulsant, Spec. Col. Trim. sécur. p. 49 (1850); Monogr. Coccin. p. 34; Crotch, Rev. Coccin. p. 99.
Idalia, Mulsant, Hist. Nat. Col. Fr., Sécurip. p. 44 (1846).

The abundant *Adalia bipunctata* (Linn.) is the type of this genus, and, though this insect has found its way from Europe to North America, it has not yet been recorded from south of the United States. *Adalia* is chiefly confined to the temperate zone; but some few species are found at high altitudes in India, and two or three are also known from South America.

1. **Adalia deficiens.**

Adalia deficiens, Muls. Spec. Col. Trim. sécur. p. 62[1]; Monogr. Coccin. p. 49[2]; Crotch, Rev. Coccin. p. 102[3].

Hab. GUATEMALA (*Melly*[1 2 3]).—SOUTH AMERICA, Chili[1 2 3], Monte Video[1 2 3].

None of our collectors seem to have met with this insect, nor have I seen specimens from the northern continent. The locality "Guatemala" requires confirmation.

COCCINELLA.

Coccinella, Linnæus, Syst. Nat. ed. 1 (1735); ed. 10, i. p. 364 (1758); Mulsant, Hist. Nat. Col. Fr., Sécurip. p. 71; Spec. Col. Trim. sécur. p. 93; Monogr. Coccin. p. 73.
Harmonia, Mulsant, Hist. Nat. Col. Fr., Sécurip. p. 108; Spec. Col. Trim. sécur. p. 75; Monogr. Coccin. p. 55; Crotch, Trans. Am. Ent. Soc. 1873, p. 373.

The differences proposed for the separation of *Harmonia* are not satisfactory, nor sufficiently constant to render such a partition of the genus of any practical value. As thus constituted, *Coccinella* includes about sixty-five species, which are chiefly confined to the northern temperate zone; a few species are tropical, and New Zealand and Australia have one each.

1. **Coccinella picta.**

Coccinella picta, Randall, Bost. Journ. Nat. Hist. ii. p. 51 (1838)[1]; Crotch, Rev. Coccin. p. 105[2].
Harmonia picta, Crotch, Trans. Am. Ent. Soc. 1873, p. 373[3].
Coccinella concinnata, Melsh. Proc. Ac. Phil. iii. p. 177[4].
Harmonia contexta, Muls. Spec. Col. Trim. sécur. p. 87[5].

Hab. NORTH AMERICA, Vancouver[2], Hudson's Bay[3], Nova Scotia[3], United States[1 2 4] from Lake Superior southwards[3].—MEXICO[2 3] (*coll. Chevrolat*[5]), Yolos (*Sallé*).

One specimen in M. Sallé's collection, though not precisely agreeing, is yet apparently identical specifically with one in Crotch's, and judging by the description may be referred to this species.

2. **Coccinella quinquelineata.**

Harmonia quinque-lineata, Muls. Spec. Col. Trim. sécur. p. 89 [1]; Monogr. Coccin. p. 67 [2].
Coccinella quinque-lineata, Crotch, Rev. Coccin. p. 106 [3].

Hab. MEXICO (*coll. Chevrolat* [1 2 3], *Sallé*), Ciudad in Durango, Las Vigas, Mexico city, Jalapa (*Höge*); GUATEMALA, Totonicapam (*Champion*).

Crotch remarks [3] that this species is "closely allied to *C. picta.*" The markings on the thorax are similar, viz. five wedge-shaped dots—three on the base and two above—forming an **M**-shaped mark. In Crotch's specimens the spots are confluent or (in the type of *quinquelineata*) confused in two lateral groups, with three central ones forming the point of the **M**-like mark.

3. **Coccinella luteipennis.** (Tab. IX. fig. 1.)

Harmonia luteipennis, Muls. Monogr. Coccin. p. 67 [1].
Coccinella luteipennis, Crotch, Rev. Coccin. p. 109 [2].

Hab. MEXICO, Oaxaca (*Boucard* [1], *Sallé* [1 2]), Etla (*Sallé*), Cordova, Las Vigas (*Höge*); GUATEMALA, Capetillo, Dueñas, San Gerónimo (*Champion*); COSTA RICA (*Van Patten*).

4. **Coccinella cyanoptera.**

Harmonia cyanoptera, Muls. Spec. Col. Trim. sécur. p. 81 [1].
Coccinella cyanoptera, Crotch, Rev. Coccin. p. 108 [2].
Harmonia viridipennis, Muls. Monogr. Coccin. p. 60 [3].

Hab. MEXICO [1 2] (*coll. Chevrolat* [1 2], *Sallé* [2 3]).

Apparently very rare. The types of Mulsant's two species, *H. cyanoptera*, in the Cambridge collection, and *H. viridipennis*, in that of M. Sallé, are before me, and I agree with Crotch in thinking they are probably the sexes of one species.

5. **Coccinella emarginata.** (Tab. VIII. fig. 25.)

Coccinella emarginata, Muls. Spec. Col. Trim. sécur. p. 97 [1]; Monogr. Coccin. p. 81 [2]; Crotch, Rev. Coccin. p. 107 [3].

Hab. MEXICO [1 2 3], Hacienda de Bleados, San Luis Potosi, Saltillo in Coahuila (*Dr. Palmer*), Presidio de Mazatlan, Ventanas, Milpas in Durango 5000 feet (*Forrer*), Aguas Calientes city, Durango city, Ciudad in Durango, Jalapa (*Höge*), Cordova, Capulalpam, Etla, Toluca, Oaxaca, Guanajuato (*Sallé*), Mexico city (*Flohr*, *H. H. Smith*), Orizaba (*F. D. Godman and H. H. Smith*), Cuernavaca in Morelos, Amula, Omilteme 8000 feet, Xucumanatlan 7000 feet, R. Papagaio, Fortin in Vera Cruz (*H. H. Smith*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA [3] (*Sallé* [1 2]), near the city, Capetillo, Dueñas, Quezaltenango 7800 feet, Zapote (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA (*Van Patten*), Caché, Volcan de Irazu (*Rogers*);

Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).—Ecuador, Corazon 12,000 feet (*Whymper*), Quito (*coll. Gorham*).

The figure is taken from a specimen from Orizaba in Mexico.

6. **Coccinella venusta.**

Coccinella venusta, Melsh. Proc. Ac. Phil. iii. p. 178[1]; Crotch, Rev. Coccin. p. 108[2].
Harmonia venusta, Muls. Monogr. Coccin. p. 61[3].
Harmonia notulata, Muls. Spec. Col. Trim. sécur. p. 83[4].

Hab. North America[3 4], United States[1 2].—Mexico (*coll. Gorham*), Yucatan[2].

This insect is not represented in M. Sallé's or any of the recent Mexican collections which have been sent; specimens of the black variety with a red transverse spot are, however, contained in my own collection.

7. **Coccinella ampla.** (Tab. IX. fig. 2.)

Harmonia ampla, Muls. Spec. Col. Trim. sécur. p. 81[1]; Monogr. Coccin. p. 61[2].
Coccinella ampla, Crotch, Rev. Coccin. p. 108[3].
Harmonia soularyi, Muls. Monogr. Coccin. p. 63[4].

Hab. Mexico, Yautepec in Morelos (*Höge*: var.), environs of Mexico (*coll. Chevrolat*[1 2 3]), Playa Vicente (*Sallé*[4]), Teapa in Tabasco (*H. H. Smith*); Guatemala, Panzos (*Champion*).

Mulsant's types of *Harmonia ampla* and *H. soularyi* are now before me, that of *H. ampla*[1] being included in the Crotch Collection at Cambridge. They are specifically identical, there being scarcely any d fference even in the number of spots; in the typical form the second transverse band does not show any trace of the fourth spot nearest the suture, this spot even in *C. soularyi* being often evanescent. There is no difference in punctuation, form, or structure. Mulsant must have forgotten the original type when he described this as new from M. Sallé's collection. The species has very much the markings of *Cycloneda abdominalis* (which Mulsant has redescribed, Monogr. p. 64, under the name of *Harmonia V-nigrum*); but is more depressed, and has the closely punctured, alutaceous sculpture of *Harmonia*.

8. **Coccinella quinquepunctata.**

Coccinella quinque-punctata, Linn. Syst. Nat. ed. 10, i. p. 365 (1758); Muls. Hist. Nat. Col. Fr., Sécurip. p. 76[1].

Hab. Europe[1].—Mexico (*Sallé*).

Of this species, which has not before been noticed in the New World, there is a single specimen labelled "Mexico" in M. Sallé's collection.

9. **Coccinella transversoguttata.** (Tab. VIII. fig. 26.)

Coccinella transverso-guttata, Fald. Mém. Ac. Petr. (Sav. étr.) ii. p. 454 (1835)[1]; Muls. Spec. Col. Trim. sécur. p. 117[2]; Crotch, Rev. Coccin. p. 116[3].
Coccinella quinque-notata, Kirby, Faun. Bor.-Am. iv. p. 230[4]; Crotch, Trans. Am. Ent. Soc. 1873, p. 370[5].
Coccinella ephippiata, Zett. Ins. Lapp. p. 235[6].
Coccinella transversalis, Muls. Spec. Col. Trim. sécur. p. 117[7].
Coccinella novem-stigma, Muls. loc. cit. p. 121[8].
Coccinella sedakovii, Muls. loc. cit. p. 1020[9].
Coccinella nugatoria, Muls. loc. cit. p. 1021[10].
Coccinella californica, Mann. Bull. Mosc. xvi. p. 312 (1843)[11].

Hab. Boreal Europe, Lapland[6], Dauria[9], Siberia[1 2 3 5], Irkutsk[1 2 8], Greenland[2 3 5], Behring and Kurile Islands[2]; Japan[3] (*Lewis*).—North America, Hudson's Bay[3 5], Canada[2 4], Vancouver (*coll. Crotch*), United States[3 8 9], Kansas[5], Utah[5], California[3 5 11].—Mexico[3 5] (*coll. Chevrolat*[7]), Atlixco (*F. D. G.*), Chalchicomula, Toluca (*Sallé*), Cordova, Las Vigas, Jalapa, Salazar (*Höge*).

As might be expected in such a widely distributed species, a good deal of variation in size and marking occurs. The Siberian and Greenland specimens often have the scutellar spot united with the humeral one, forming a transverse band; but examples occur in Siberia with the spots detached, as they usually are in the specimens I have seen from North and Central America, and then they so much resemble *C. novem-notata* as to be frequently confounded with it. *C. transversoguttata* may, however, be distinguished by the head having the front and the labrum almost entirely white, and by the front margin of the thorax being narrowly edged with the same colour. Other fine distinctions are also present. It is less ovate, and the surface of the elytra is scarcely perceptibly punctate, even when viewed under a Coddington lens. The species is common at times, and Herr Höge obtained a good series of it at Las Vigas.

10. **Coccinella novem-notata.**

Coccinella novem-notata, Herbst, Käfer, v. p. 269, t. 55. fig. 8[1]; Muls. Spec. Col. Trim. sécur. p. 123[2]; Monogr. Coccin. p. 99[3]; Crotch, Rev. Coccin. p. 117[4]; Trans. Am. Ent. Soc. 1873, p. 370[5].
Coccinella franciscana, Muls. Opusc. ent. iii. p. 19 (1853)[6].

Hab. North America[1], Canada, Montreal (*coll. Gorham*), United States[2 3 4], Atlantic region[5], California[6].—Mexico[2 3 4 5]; Guatemala[4 5] (*Sallé*[2 3]).

I include this North-American species on the authority of Mulsant's works. It is not represented in any collection I have examined from either Mexico or Guatemala, and *C. transversoguttata* is often so difficult to separate from it, that the record needs confirmation.

Although Crotch[4 5] gives Mexico and Guatemala for this species, he is in this and

other cases simply following Mulsant, and there are no examples from these countries in his collection.

C. franciscana is a variety with the elytra without spots (excepting the scutellar one) parallel to *C. californica*.

11. **Coccinella cyathigera.** (Tab. IX. fig. 3.)

Oblongo-ovata, lutea, subtus cum pedibus rufo-piceis; prothorace subtilissime punctato, macula discoidali **M** simulante, interdum interrupta vel e maculis distinctis formata, nigra; elytris creberrime fortius punctatis, punctis uno in collo humerali, tribus paullo ante medium fasciam præbentibus, duobus pone medium suturaque tenuissime rufo-piceis. Long. 5 millim.

Hab. GUATEMALA, Quiche Mountains 7000 to 9000 feet, Quezaltenango 7800 feet, Calderas 7000 feet (*Champion*).

The general colour of the upper surface is pale luteous-yellow; the head bears a double black spot at its base, usually concealed by the thorax. The thorax is transverse, not deeply emarginate in front, the front margin straight; the sides moderately arcuate, narrowing in front, faintly reflexed. Scutellum black, punctured. Elytra very thickly punctured, and the sculpture quite visible under an ordinary lens of one and a half to two inches focus, scarcely margined; the spots ordinarily very small, placed—1 humeral, 3 fasciate (the one near the suture and the external one a little nearer the base than the middle one), and 2 at one third before the apex,—the suture very narrowly rufo-piceous. The underside and legs of a pitchy-red colour, the breast and head being of a deeper tone than the episterna and abdomen.

In about a dozen examples of this species there is no variation in the number of elytral spots nor any trace of additional ones. The prothoracic **M**-shaped mark is very clearly defined; its upper angles are upon the front margin; its middle is formed by a prolongation of the junction of the oblique lines, so as to form a **Y** when detached from the side lines; the bases of the side lines are in the form of triangular spots on the base, sometimes detached. This insect has much the appearance of various other species, as the European *C. variabilis*, *Psyllobora configurans*, *Cycloneda abdominalis*, &c.

12. **Coccinella albo-picta.** (Tab. IX. fig. 4.)

Oblongo-ovata, nigro-picea, nitida, capite prothoraceque albis, hoc disco macula **M** latum simulante, interdum interrupta, punctoque laterali; illo basi binotato, punctisque nonnullis in epistomate notatis; elytris singulis maculis quinque albis—una basali, juxta scutellum, una discoidali juxta suturam, tribus lateralibus, sæpissime conjunctis; prosterno et epimera mesosternalis albis. Long. 3–3½ millim.

Hab. MEXICO, near the city (*Höge*); GUATEMALA, San Gerónimo (*Champion*).

Only five specimens of this species have been sent, four of which are from Mexico city.

It is of a puzzling aspect, looking as if it might be a variety of some other species, but it is, I believe, quite distinct. *C. albo-picta* seems to come nearest to *C. areata*, Muls., a Bolivian insect. The head is white, with the base marked, as is so often the

case, with a double spot, concealed by the thorax, the epistome often with a V-shaped spot; the mouth-parts are yellow. The thorax is about twice as wide as long, smooth, and impunctate, the front margin straight with the angles prominent and deflexed; the markings consist of a broad **M**—this in the darker individuals may be a broad patch enclosing two angular white spots, or may be composed of five or more spots, variously united in different specimens, but it never quite reaches the front margin, and the two triangular spots on the base are always distinct; sometimes an additional "lateral" comma-like spot is joined to the sides of the **M**. The elytra are only very finely and obsoletely punctured; they are pitchy-black or pitchy-brown; the humeral and apical white marks are elongate, following the margin, and narrowly joined to the middle lateral spot, so that the whole margin with the epipleuræ is white; the discoidal white spot may be joined to the lateral median one, forming a broad fascia, and occasionally it is united with the anterior one so as to form a common discoidal spot in the less deeply coloured specimens. The legs are yellow.

13. **Coccinella maculosa.** (Tab. IX. fig. 5.)

Oblongo-ovata, subdepressa, piceo-brunnea, creberrime subtilissime punctata, supra rufo-brunnea; capitis basi, prothoracis maculis septem, elytrorum maculis octo, duabus juxta basin, duabus juxta marginem, una mediana, ad suturam hærente, tribus subapicalibus, fasciam obliquam undulatam præbentibus, nigris: pedibus rufo-brunneis. Long. 5 millim.

Hab. Mexico, Oaxaca (*Höge*).

The features by which this insect may be recognized are:—The rather flat depressed form, like that of *C. venusta*; the dark red-brown colour; and the seven thoracic spots —the two upper ones large and wedge-shaped, the two lower ones (or those representing the lower branches of the **M**) also large, and for the most part separate from the upper, the middle one in the form of a dot, a little above the base, the two lateral ones in the ordinary position. The elytra have spots of a deep blackish-brown colour: the two discoidal or middle ones are large, joined to the brownish suture by a recurving streak (somewhat as in *C. venusta*); the two lateral spots are a little behind the two basal ones, and are elongate, and either very narrowly divided or united; of the three subapical spots, the external two are confluent in both of the two examples obtained, forming an undulate *V*-like mark, and are also just in contact with a square sutural spot (which, however, would obviously be often detached); the punctuation is distinct under a Coddington lens, but is very close and fine; the entire limb is very narrowly brownish; the margin is hardly at all expanded.

This species would, I think, be best placed next to *C. venusta*, on account of its flattish form and the style of marking. I have only seen two specimens.

14. **Coccinella compta.** (Tab. IX. fig. 6.)

Breviter oblonga, parum ovata, nigra, nitida, fere glabra, supra alba; prothorace nigro, margine antico et laterali, linea mediana basin haud attingente albidis; elytris albis, macula in callo humerali, alteraque

duplici laterali pone medium parva, sutura latius, pone medium in maculam subquadratam dilatata, margineque apicali nigris pernitidis; antennis pedibusque rufis. Long. $3\frac{1}{2}$ millim.

Hab. GUATEMALA, Totonicapam, San Gerónimo (*Champion*).

The short and rather convex form of this insect is somewhat suggestive of *Brachyacantha*, and it a little resembles *B. lepida* in pattern. There is a slight metallic appearance in the black pattern of the thorax and elytra. The head is white and spotless, the eyes rather large. The thorax is very short at the margins, longer in the middle (as the basal margin is arcuate), and has the sides strongly deflexed; the black pattern of the disc is divided by a middle line, and is notched opposite the front angles so as to form a square spot there. The elytra vary a little in pattern in the two specimens before me—the one from San Gerónimo has two large transversely squarish spots on the suture united by the black sutural line, and a large and rather angular spot occupying the callus, and on the margin, nearly opposite the hinder sutural spot, is a small spot (this being double in the Totonicapam example); the apical margin is less distinctly black, and in both specimens only as far as the lateral spot.

This is an exceedingly neat, pretty species. It is difficult to compare it to any other I have seen without fear of misleading; the markings are somewhat suggestive of those of *Propylea conglobata*, but the insect is more convex and more shining than that species.

The Totonicapam specimen is figured.

15. **Coccinella concinna.**

Oblonga, depressa, subobovata, albida, subtus nigro-picea; capitis basi et epistomate, prothoracis lineis duabus ad basin ampliatis, marginem anticam haud attingentibus, scutello, sutura, macula pone medium fasciiforme et nonnunquam duabus alteris parvulis, una in callo humerali, una quam hæc paullo posteriore nigro-piceis; elytris creberrime obsolete punctatis; pedibus luteis. Long. $3\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

This little species has the form of *Adalia*, but at present I prefer associating it with *C. compta*, to which it bears some resemblance. The sides of the thorax are evidently rounded and contracted in the hind angles, so as to form a break in outline with the elytra. The margins of the thorax and of the elytra are moderately expanded and reflexed. The elytra are widest behind the middle opposite the larger spot; this latter is of an irregular form, but indicates an oblique fascia nearer to the base at the margin than at the suture (in none of the three examples before me does it reach either); in one example the two smaller spots are wholly wanting, they are both submarginal, the first actually on the callus; the sutural pitchy-black line vanishes near the apex, where the limb alone is pitchy.

The body beneath is black, smooth, and not punctured; the mesosternum has a shallow impression for the reception of the prosternal process; the coxal depressions on the first ventral segment are ill defined, the lines proceeding from the intercoxal process being shortened and not touching the hind margin of the segment. The middle and hind femora have a dusky cloud in the middle.

16. **Coccinella pantherina.** (Tab. IX. fig. 9.)

Breviter oblongo-ovata, convexa, lutea, nitida, capitis basi maculaque duplici epistomatis piceis; prothoracis disco nigro, margine antico et laterali (ad angulum anticum latiore) lineaque mediana basin haud attingente luteis; elytris sutura late, margine apicali tenuiter, plagia suturæ parallela in medium desinente, macula oblonga pone medium suturæ conjuncta, et tribus lateralibus irregularibus, attamen distinctis, una in callo humerali cuneiformi, nigris; pedibus luteis. Long. $2\frac{1}{2}$ millim.

Hab. GUATEMALA, Totonicapam 10,000 feet (*Champion*).

This little species is of about the size and form of *Brachyacantha lepida*. The black markings of the elytra are developed so as to leave only a reticulate yellow pattern, and the puncturing is hardly visible, except under a Coddington-lens. The body beneath is pitchy, with the exception of the abdomen, which is luteous. Two specimens were captured in the pine-woods at Totonicapam.

17. **Coccinella quichensis.** (Tab. IX. fig. 10.)

Breviter ovata, lutea, elytris creberrime vix visibiliter punctatis; capitis basi, epistomate, prothoracis signatura litteram **Y** simulante, maculisque duabus basalibus nigris; elytrorum sutura plagiisque quatuor (interioribus vittam interruptam prebentibus) exterioribus, his parallelis sed punctiformibus, nigro-subæneis; corpore subtus pedibusque rufis. Long. 4 millim.

Hab. GUATEMALA, Quiche Mountains 7000 to 9000 feet (*Champion*).

This is a broad, rather squarely built, depressed species, the markings of the thorax somewhat suggestive of those of *Chilomenes*. Only one specimen has been received, and the figure will convey a better idea of it than a long description.

18. **Coccinella** ——?

Hab. GUATEMALA, near the city (*Champion*).

A single specimen of a black variety of some species with the thorax narrowly bordered in front and on the sides with yellow. The elytra each with an irregular rather large red spot in their basal half. The legs red.

19. **Coccinella** (?) ——?

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

A single specimen of a small species. Sordid whitish-yellow. The thorax blackish in the centre, the elytra each with a transverse black spot nearly in the middle. A little like *Cycloneda abdominalis* *.

Subfam. *HALYZIIDES.*

This subfamily corresponds to Mulsant's "Troisième branche" — Halysiaires — (Monogr. des Coccin. p. 101); it contains a very large proportion of the true Coccinellidæ from all parts of the world.

* The reference to the figure of *C. concinna* (Tab. IX. fig. 7) was accidentally omitted on p. 160.

I have retained it as a convenient temporary working division, mainly distinguished by the less convexity of the species, their longer antennæ, and some other quite unimportant characters which are partly common to other groups. But I am unable to discover any real ground for separating it from the "Coccinellides," or of any one character that will distinguish it.

MYSIA.

Mysia, Mulsant, Hist. Nat. Col. Fr., Sécurip. p. 128 (1846) (nomen præocc.).

This boreal genus consists at present of four species found where Coniferæ are abundant; the only species known from Central America was referred to *Pelina* by Mulsant, probably owing to its having the margins of the elytra widened. This species is not represented in our collections, and, indeed, its precise origin is doubtful. It is very probable, however, that the genus occurs in high altitudes in Northern Mexico.

1. **Mysia gerstaeckeri.**

Pelina Gerstäckeri, Muls. Monogr. Coccin. p. 192 (1866)[1].
Mysia Gerstäckeri, Crotch, Rev. Coccin. p. 125[2].

"Brièvement ovalaire. Prothorax et élytres d'un jaune d'ocre un peu foncé: le premier sans taches: les secondes ornées chacune de quatre bandes longitudinales d'un rouge roux ou fauve: trois constituant une sorte d'N: la 2e courte, naissant de la base et presque unie au tiers du côté externe de la plus voisine de la suture. Dessous du corps et pieds d'un roux fauve." Long. 7–8 millim.

Hab. MEXICO (*Boucard* [2]).—SOUTH AMERICA, Brazil ? [1].

I have not seen an example of this insect.

PELINA.

Pelina, Mulsant, Spec. Col. Trim. sécur. p. 27 (1850).
Palla, Mulsant, loc. cit. p. 273; Crotch, Rev. Coccin. p. 126.

Three species may be assigned to *Pelina,* all from Central or Tropical South America. The allied genus *Ballia,* which has been united with it in the Munich Catalogue, is, however, confined to India.

1. **Pelina hydropica.** (Tab. IX. fig. 8.)

Pelina hydropica, Muls. Spec. Col. Trim. sécur. p. 273[1].
Palla hydropica, Crotch, Rev. Coccin. p. 126[2].

Hab. MEXICO [1 2], Capulalpam, Etla, Juquila, Totosinapam, Parada, Peras, Chiapas (*Sallé*), Las Vigas, Jalapa (*Höge*); GUATEMALA (*Sallé*), Panima in Vera Paz, Calderas (*Champion*), Tepan (*Conradt*).

The specimen figured is one from Totosinapam.

EGLEIS.

Egleis, Mulsant, Spec. Col. Trim. sécur. p. 151 (1850).

Practically this genus, at least so far as the New-World representatives are concerned, is not distinct from *Halyzia*; three species assigned to it from Australia are probably not congeneric.

1. **Egleis adjuncta.**

Egleis adjuncta, Muls. Spec. Col. Trim. sécur. p. 156[1]; Crotch, Rev. Coccin. p. 131[2].

Hab. Mexico[2] (*Mus. Paris*[1]).—Colombia[1 2].

A species very much resembling *Cycloneda abdominalis*, but with the body and legs black. The Mexican locality needs confirmation.

NEOHALYZIA.

Halyzia, Mulsant, Spec. Col. Trim. sécur. p. 163 (partim).
Neohalyzia, Crotch, Rev. Coccin. p. 133 (1874).

The single species for which Crotch proposed this genus has a peculiar aspect, but the characters upon which he separated it from *Halyzia* seem to me to be illusory.

1. **Neohalyzia perroudi.** (Tab. IX. fig. 11.)

Halyzia Perroudi, Muls. Spec. Col. Trim. sécur. p. 163[1]; Monogr. Coccin. p. 125[2].
Neohalyzia Perroudi, Crotch, Rev. Coccin. p. 133[3].

Hab. Mexico (*Boucard*[3]), Capulalpam, Yolotepec (*Sallé*), Jalapa (*Flohr*, *Höge*), Temax in North Yucatan (*Gaumer*); Guatemala, Quiche Mountains 7000 to 9000 feet, Capetillo, Dueñas, Aceituno, San Gerónimo, Panzos (*Champion*), Volcan de Fuego (*Salvin*); Panama, Volcan de Chiriqui 4000 feet (*Champion*).—Colombia[1 2 3].

Specimens from Guatemala and from Chiriqui are sometimes very small, and are a little more shining than the full-sized examples, but they do not apparently differ specifically.

HALYZIA.

Halyzia, Mulsant, Hist. Nat. Col. Fr., Sécurip. p. 148 (1846).

Halyzia, in the restricted sense used by Crotch in his 'Revision,' contains only five species. In the Munich Catalogue, on the contrary, fifteen of Mulsant's genera and four of Crotch's are sunk under this name; and it is there made one of the largest aggregates in the Coccinellidæ, containing more than one hundred very diverse species from all parts of the globe.

The proper definition of this and other genera has yet to be made. One of the species I propose to refer to *Halyzia* is allied to the type of the genus, *H.* 16-*guttata*, by its slightly widened margins, by the form of the thorax, which has the sides thin

and expanded, with round posterior angles, by the mesosternum having no fossa in the middle of the front margin for the apex of the prosternum, by its longish legs, &c.; but in other points, as its round and convex form, it superficially resembles *Cycloneda abdominalis*. While I do not feel at present able to offer systematic characters for the reconstruction of the genera of this group, I think the presence or absence of the mesothoracic fossa (which is much more than a mere emargination) will prove of far greater value than the character drawn from the abdominal coxal fossa, "plaque abdominale," which seems to me to be very vague.

1. **Halyzia emaciata.** (Tab. IX. figg. 12, 13.)

Pallide testacea, fere albida, prothorace lineolis duabus basalibus, elytris lunula parvula juxta medium suturæ punctisque duobus submarginalibus brunneis; elytris creberrime, obsoletius, subconfluenter punctatis. Long. 3–4½ millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 6000 feet (*Champion*).

Head in repose quite covered by the front of the thorax, which, being almost translucent, permits the eyes to be seen through it from above; front margin of the thorax not emarginate; antennæ moderately long, all the joints longer than broad, the terminal ones fully thrice as long as wide; the tarsi and the extreme basal margin and suture of the elytra very narrowly brownish. The elytral spots are very indistinct; in one example, however, the sutural lunules are united and form a common spot. Viewed laterally, the outline of the elytra from the base to the apex is gibbous.

About a dozen examples of this obscure and very plain-looking species were obtained by Mr. Champion at various altitudes above 2000 feet on the slopes of Volcan de Chiriqui.

2. **Halyzia epistictica.** (Tab. IX. figg. 14, 15.)

Oblonga, albida vel albo-testacea, prothorace maculis tribus oblongis, elytris singulis maculis nonis guttiformibus, 2, 3, 3, 1 dispositis, brunneo-testaceis, creberrime obsoletius punctatis. Long. 5–6 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This insect is more clearly of the form and structure of *H.* 16-*guttata* than is *H. emaciata*. The thorax is much narrower than the elytra, and is shining and diaphanous at its margins; the front is not excavated and conceals the head, the eyes showing through. The elytra are shining, and only seem to be punctured when seen under a quarter-inch lens; in one of the two Guatemalan specimens they are white, in the other and in the Chiriqui example they are of a bright but pale yellow. The spots are, for the most part, elongate streaks pointed at their lower end, or at both ends; the three thoracic spots are irregularly triangular; of the elytral spots, two are basal (the internal one more elongate than the external one), and the internal or

sutural one of the succeeding three is hooked outwardly and recurved towards the base on the sutural side—this spot is usually detached from the suture, but in one example it forms a common pear-shaped spot on the suture.

We have received three examples of this species, two of them being from San Gerónimo. A specimen from each locality is figured; the one from Panama is rather smaller than the Guatemalan representatives.

3. **Halyzia championi.** (Tab. X. fig. 1.)

Oblonga, læte, dilute flava; prothorace quam elytra multo angustiore, basi punctis duobus nigris lateribus modice explanatis et reflexis, subdiaphanis; elytris creberrime minute punctatis, singulis punctis novem, 2, 3, 3, 1 dispositis, nigris. Long. $4\frac{1}{2}$ millim.

Hab. PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

The sides of the thorax converge towards the front, but are considerably rounded at the hind angles; the front margin is almost straight, and the head can be retracted at least as far as to hide the eyes beneath it; the base is sinuous, and is marked with two round dots (like those in the Eastern *Thea cincta*), and this character alone will distinguish *H. championi* from any *Halyzia* known to me. Of the elytral spots, two are near the base, one of them being on the humeral callus, and one between it and the suture; then three almost in a straight row, but the inner one a little nearer the apex than the others, then three in a chevron; and one subapical small dot. In the number and position of the elytral spots the species resembles *Neohalyzia perroudi*.

Only one example of this pretty *Halyzia* has been found, which I dedicate to its captor, Mr. G. C. Champion.

PSYLLOBORA.

Psyllobora, Mulsant, Spec. Col. Trim. sécur. p. 166 (1850); Monogr. Coccin. p. 126.

Psyllobora is, as Crotch has remarked, the New-World representative of *Thea*. It is simply a convenient geographical division, several species of *Thea*, e. g. *T. variegata* (from St. Helena and Africa) &c., being absolutely conformable to the type of *Psyllobora*, and some others having the expanded margin of typical *Halyzia*. The *Psylloboræ* are, however, generally to be distinguished by the style of marking; and among them are found the smallest species of Coccinellidæ, not exceeding the smaller *Scymni* in stature. About forty species are recorded by Crotch, chiefly from the South-American continent, one or two species only being found in the United States.

According to Mr. Champion some of the *Psylloboræ* are found commonly on orange-trees.

1. **Psyllobora decipiens.**

Psyllobora decipiens, Muls. Spec. Col. Trim. sécur. p. 177[1]; Monogr. Coccin. p. 134[2]; Crotch, Rev. Coccin. p. 136[3].

Hab. MEXICO, Oaxaca (*Höge*).—COLOMBIA [1 2 3]; BRAZIL [1 2], Santarem [3].

One specimen of this species, without head or thorax, is all I have yet seen from the northern continent of America.

2. **Psyllobora confluens.** (Tab. IX. fig. 18.)

Coccinella confluens, Fabr. Syst. Eleuth. i. p. 373 [1].
Psyllobora confluens, Muls. Spec. Col. Trim. sécur. p. 174 [2]; Monogr. Coccin. p. 133 [3]; Crotch, Rev. Coccin. p. 136.

Hab. Mexico, Jalapa (*Höge*); Guatemala, Mirandilla 1700 feet, Zapote (*Champion*).—South America [1 2 3], Colombia [2 3], Cayenne [2 3], Brazil [2 3].

Four examples from Zapote and one from each of the other localities are all I have seen as yet from Central America. The figure is taken from the specimen from Jalapa.

3. **Psyllobora germari.**

Psyllobora Germari, Muls. Spec. Col. Trim. sécur. p. 202 [1]; Monogr. Coccin. p. 145 [2]; Crotch, Rev. Coccin. p. 140 [3].

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—Brazil [1 2], Rio Janeiro (*Fry* [3]).

Two specimens from the Volcan de Chiriqui agree so nearly with one of Mr. Fry's examples from Rio Janeiro now in Crotch's collection, that I hardly think they can represent more than a local variety of the same species. They are smaller, the ground-colour of the elytra is a bright "gamboge"-yellow (indicating that they were freshly emerged from the pupa when caught), and the markings are rich brown, or chestnut-red. The posterior spot on the elytra is rounder than the corresponding one in the exponent of *P. germari* alluded to.

4. **Psyllobora luctuosa.** (Tab. IX. fig. 16.)

Psyllobora luctuosa, Muls. Spec. Col. Trim. sécur. p. 179 [1]; Crotch, Rev. Coccin. p. 141 [2].
Psyllobora tardigrada, Muls. Monogr. Coccin. p. 135 [3].

Hab. Mexico, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*), Mexico city (*Höge, H. H. Smith*), Guanajuato (*Sallé*), Orizaba (*H. H. Smith and F. D. Godman*); Guatemala, Cerro Zunil, Zapote, Capetillo, Dueñas, Guatemala city, Aceituno (*Champion*).—Colombia [1 3], Bogota [2].

Small examples of this species come very close to *P.* 20-*maculata*. It may, however, be generally distinguished from that species by being larger, of a whiter colour, by the spots being less confluent, and by having a small basal spot external to the two large ones just below the humeral callus. Mulsant describes [1] the thorax as having only four spots; but he had only one example, in which the two central spots were probably united. There are five spots, distinctly separated in the great majority of specimens,

and our examples agree absolutely with the type of *P. tardigrada* now in Crotch's collection. Two spots near the centre of the elytra unite so as to form a kind of parenthesis ( ), and the upper end of this mark is often united to a spot near the suture, which then on the right hand forms a rough figure of 5.

We have received many specimens. The figure is taken from one from Guanajuato.

5. **Psyllobora viginti-maculata.**

Coccinella 20-maculata, Say, Journ. Acad. Phil. iv. p. 96 (1824) [1]; Complete Writings, ii. p. 234 [2].
Psyllobora viginti-maculata, Muls. Spec. Col. Trim. sécur. p. 183 [3]; Monogr. Coccin. p. 137 [4]; Crotch, Rev. Coccin. p. 141 [5].
Psyllobora tædata, Lec. Rep. Surv. Pacif. ix. p. 70 (1857) [6].
Psyllobora viginti-signata, Bohem. Kongl. Svenska Freg. Eugen. Resa, Ins. p. 204 [7].
Psyllobora intersparsa, Bohem. loc. cit. p. 204 [8].

Hab. North America [1 2], United States [3 4 5], San Francisco [6], California [5 8].—Mexico [3 4 5], Northern Sonora (*Morrison*), Toxpam (*Sallé*); British Honduras, Belize (*Blancaneaux*); Guatemala, San Isidro, Aceituno (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Bugaba (*Champion*).

This little species, which is widely distributed in the Northern continent of America, is very variable both in size and in the degree to which the markings are confluent. It may be generally distinguished from its nearest allies by its small size (one of the Belize specimens is about 1·5 millim. only in length), by the presence of only two basal spots (which are rather larger than the corresponding spots in *P. luctuosa*), by the two central and two subapical spots often being united to form a broad letter *x*, and by the thoracic spots being often united in the longitudinal direction (which they are not in *P. luctuosa*). Often the elytral spots are all united, and *P. tædata* is a variety of this class.

It is probable that some other so-called species are but local varieties of this insect. Both this and *P. luctuosa* occurred together at Aceituno.

According to Crotch [5], the locality "Colombia" quoted by Mulsant [3 4] belongs to *P. liliputiana*. Boheman's locality Tahiti [7] is in all probability incorrect.

6. **Psyllobora lutescens.**

Psyllobora lutescens, Crotch, Rev. Coccin. p. 138 [1].

Hab. Guatemala (*Mus. Brit.*[1]).

"Allied to *P. rufosignata*, with the ground-colour pale yellow; the markings are: 1 elongate; 2 ovate, simple; 3 elongate, sutural, recurved outwards at an acute angle at its base; 4 oblong, united by a line to 6; 5 oblong; 6–9 subequal, disposed in a cross. Length 2 lin."

I have not seen an example of this species.

7. **Psyllobora roei.** (Tab. IX. fig. 17.)

Psyllobora roei, Muls. Spec. Col. Trim. sécur. p. 187 [1]; Monogr. Coccin. p. 141 [2]; Crotch, Rev. Coccin. p. 142 [3].

Hab. MEXICO [1 2 3] (*Hope*); GUATEMALA, near the city, Capetillo, Dueñas, San Gerónimo, San Joaquin in Vera Paz (*Champion*).

This insect does not appear to have been met with by any of our Mexican collectors.

The specimen figured is one from Guatemala city.

CLEIS.

Cleis, Mulsant, Spec. Col. Trim. sécur. p. 208 (1850); Monogr. Coccin. p. 148.

This is a most unsatisfactory genus, consisting of three species, which, according to Crotch's collection, seem to have little to do with each other. The characters, moreover, given by Mulsant, depending chiefly on the degree of emargination of the prothorax in front, are absolutely valueless. *Cleis lynx*, however, is a more elongate and depressed form than any *Psyllobora*, and reminds one of *Anisosticta*. What Mulsant says of the mesosternum, "à peine échancré," applies equally well to *Thea* or *Psyllobora*, besides being vague and unmeaning.

1. **Cleis mirifica.**

Cleis mirifica, Muls. Spec. Col. Trim. sécur. p. 209 [1]; Monogr. Coccin. p. 149 [2].
Cleis lynx, var., Crotch, Rev. Coccin. p. 142.

Hab. MEXICO ? [1 2].

In Crotch's collection there is placed under the name *Cleis lynx* a specimen of the species I have described above (*anteà*, p. 158) as *Coccinella albopicta*. This specimen is one from Chevrolat's collection, and is certainly (as I think) not a variety of *C. lynx*. On comparing it with Mulsant's description of *C. mirifica* I find such discrepancies that I cannot accept the identification. I am therefore unacquainted with the true *C. mirifica*, Muls.

2. **Cleis lynx.** (Tab. IX. fig. 19.)

Cleis lynx, Muls. Spec. Col. Trim. sécur. p. 210 [1]; Monogr. Coccin. p. 149 [2]; Crotch, Rev. Coccin. p. 142 [3].

Hab. MEXICO [1 2 3], near the city (*Höge*).

3. **Cleis concolor.**

Cleis concolor, Crotch, Rev. Coccin. p. 142 [1].

Hab. MEXICO [1], Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

There is one specimen of a very obscure Coccinellid amongst Mr. H. H. Smith's

captures which appears to agree better with the type of this species in Crotch's collection than with any other, but it has no special relation with *C. lynx*.

NEOCALVIA.

Neocalvia, Crotch, Rev. Coccin. p. 129 (1874).
Calvia, Mulsant, Spec. Col. Trim. sécur. p. 143 (pars).

Neocalvia is the New-World exponent of the old genus *Calvia*. It has not hitherto been recorded from the Northern continent.

1. **Neocalvia duodecim-guttata.** = cayennensis Gmelin

Coccinella 12-*guttata*, Fabr. Mant. Ins. ii., App. p. 379 (1789)[1] (nec Poda).
Neocalvia duodecim-guttata, Crotch, Rev. Coccin. p. 129[2].
Coccinella cayennensis, Gmel. Syst. Nat. i. 4, p. 1659[3].
Calvia cajennensis, Muls. Spec. Trim. sécur. p. 148[4]; Monogr. Coccin. p. 118[5].

Hab. GUATEMALA, San Gerónimo (*Champion*).—SOUTH AMERICA, Cayenne[1 2 3 4 5].

Three specimens were obtained by Mr. Champion in Guatemala. They have the white markings rather more diffuse than in typical representatives from Cayenne.

2. **Neocalvia areolata.** (Tab. IX. fig. 20.)

Convexa, subhemisphærica, fere lævis, pallide albo-flavescens; prothorace vitta lata, elytris signatura reticulata brunneis, areolas in singulis septem includente, duas basales, duas postmedianas, duas transversas apicales, unam discoidalem subquadratam. Long. 6 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

The pattern of the elytra of this species is very elegant. The brown reticulate line is thin, except where it crosses the suture below the basal areæ. The ground-colour is pale whitish-yellow, the pattern red-brown. The thoracic vitta is narrowly bordered with darker brown, and the entire limb of the thorax and elytra is narrowly brown. In one of the two specimens the apical transverse areolet is united with the large semicircular lateral one; but in the other, which we figure, the two are quite separate. The two large postmedian areæ may be termed "common" to the two elytra.

CYCLONEDA.

Cycloneda, Crotch, Rev. Coccin. p. 162 (1874).
Daulis, Mulsant, Spec. Col. Trim. sécur. p. 296 (nec Erichson, in Wiegm. Archiv für Naturg. viii. 1, p. 241).

The characters upon which this genus is founded are, as Crotch himself has remarked, not satisfactory. In the Munich Catalogue *Cycloneda* and the various divisions of *Neda* proposed by Crotch are all again combined under *Neda*. By this method, however,

Oriental species possessed of good differential characters are mixed, forming a medley of heterogeneous elements.

Thirty species are included under *Cycloneda* by Crotch.

1. **Cycloneda sallæi.** (Tab. IX. fig. 21.)

Daulis sallei, Muls. Spec. Col. Trim. sécur. p. 303 [1].
Cycloneda sallæi, Crotch, Rev. Coccin. p. 163 [2].

Hab. Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).—Venezuela, Caracas [1]; West Indies (*Mus. Brussels* [2]).

2. **Cycloneda callispilota.**

Coccinella callispilota, Guérin, Icon. du Règne Anim., Ins. p. 320 [1].
Neda calispilota (sic), Muls. Spec. Col. Trim. sécur. p. 294 [2]; Monogr. Coccin. p. 202 [3].
Cycloneda callispilota, Crotch, Rev. Coccin. p. 163 [4].

Hab. ? Mexico [2 3 4].—South America, Colombia [3 4], Brazil [1 2 3 4].

Guérin [1] gives "Brazil" as the locality for this species; but Mulsant asserts [2] that the type came from Mexico.

3. **Cycloneda retrospiciens.** (Tab. X. fig. 2.)

Cycloneda retrospiciens, Crotch, Rev. Coccin. p. 163 [1].

Hab. Mexico [1] (*coll. Crotch, ex Deyrolle*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Capetillo, Dueñas (*Champion*).

In the five specimens we have received of this species the two thoracic lines are not completed as in the type, and the elytra are rather more distinctly margined with black. The insect is evidently allied to *Neda marginalis*.

Var.? Lutea, capite prothoraceque dilutioribus, pedibus flavis, tarsis subfuscis. Long. 8 millim.

Hab. Guatemala, Dueñas (*Champion*).

In the single example which I, with some doubt, refer to *C. retrospiciens* as a variety the head and thorax are testaceous-yellow, without any trace of markings, except that the base of the latter is very narrowly margined with black. The elytra have the limb so narrowly black as scarcely to be noticeable, and the legs are pale.

4. **Cycloneda sanguinea.**

Coccinella sanguinea, Linn. Amœn. Acad. vi. (Cent. Ins. no. 11) p. 393 (1763) [1].
Daulis sanguinea, Muls. Spec. Col. Trim. sécur. p. 326 [2]; Monogr. Coccin. p. 224 [3].
Daulis steini, Muls. Monogr. Coccin. p. 222 [4].
Cycloneda sanguinea, Crotch, Rev. Coccin. p. 164 [5].

Hab. North America, Georgia, Colorado, California [5].—Mexico, Paso del Norte, Ciudad in Durango (*Höge*), Presidio de Mazatlan, Ventanas (*Forrer*), R. Papagaio, Tierra Colorada 2000 feet, and Amula 6000 feet, all in Guerrero, Cuernavaca, Atoyac in Vera Cruz (*H. H. Smith*), Puebla, Etla, Atlixco, Guanajuato, Oaxaca, Juquila, Orizaba, San Andres Tuxtla, Toxpam (*Sallé*), Jalapa (*Höge*, *Sallé*), San Juan Bautista in Tabasco (*Höge*); British Honduras (*Blancaneaux*); Guatemala, near the city, Capetillo, Dueñas, San Joaquin, Teleman, Panzos (*Champion*), Chinautla (*Salvin*); Nicaragua, Chontales (*Janson*, *Belt*); Costa Rica (*Van Patten*), Caché, Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui, Bugaba (*Champion*).—South America [3] to Coquimbo [4] in Chili [2], and Buenos Ayres in the Argentine Republic; Antilles, Cuba [2], San Domingo [2], Guadeloupe [2], &c.

One of the most widely distributed and common of the Coccinellidæ in the New World. *Coccinella munda*, Say, is hardly to be distinguished from small examples of this species.

5. Cycloneda rubida.

Daulis rubida, Muls. Spec. Col. Trim. sécur. p. 340 [1]; Monogr. Coccin. p. 230 [2].
Cycloneda rubida, Crotch, Rev. Coccin. p. 165 [3].
Daulis vigilans, Muls. Spec. Col. Trim. sécur. p. 340 [4]; Monogr. Coccin. p. 340 [5].

Hab. British Honduras, R. Hondo (*Blancaneaux*); Guatemala, Cubilguitz in Vera Paz (*Champion*); Panama, Bugaba, San Feliz (*Champion*).—South America, Colombia [3 4 5], Cayenne [1 2 3], Amazons [5], Ega [3].

Var. Elytris viridibus vel obscure flavis.
Daulis pallidula, Muls. Spec. Col. Trim. sécur. p. 329 [6]; Monogr. Coccin. p. 224 [7].
Cycloneda pallidula, Crotch, Rev. Coccin. p. 164 [8].
Daulis deflorata, Muls. Spec. Col. Trim. sécur. p. 330 [9].
Daulis gutticollis, Muls. loc. cit. p. 332 [10].

Hab. Mexico, Puebla, Vera Cruz (*Sallé*); Guatemala, San Gerónimo and Panzos in Vera Paz (*Champion*).—South America [10], Colombia [7 8 9], Venezuela [8], Cayenne [6 7], Brazil [6 7].

I am obliged to add *Daulis pallidula*, *D. deflorata*, and *D. gutticollis* to the synonym already pointed out by Crotch [3], for I find no difference but that of colour; pale yellow specimens from the River Hondo and from Cubilguitz appear to me as well placed with *D. rubida* as with *D. pallidula*.

Mulsant has described what seems to be the less abundant variety first, though he does not mention the green colour: this fades to a dirty yellow; but in some specimens it is well preserved, as in the examples in Sallé's collection and in several of those collected by Mr. Champion.

Mr. Champion obtained a very large series of the typical *C. rubida* at Bugaba.

6. **Cycloneda abdominalis.** (Tab. IX. figg. 22–24.)

Coccinella abdominalis, Say, Journ. Acad. Phil. iv. p. 95 (1824) [1].
Daulis abdominalis, Muls. Spec. Col. Trim. sécur. p. 316 [2].
Cycloneda abdominalis, Crotch, Rev. Coccin. p. 163 [3].
Harmonia V-nigrum, Muls. Monogr. Coccin. p. 64 [4].
Coccinella V-nigrum, Crotch, Rev. Coccin. p. 109 [5].

Hab. NORTH AMERICA [1], United States [2 3].—MEXICO [2 3], Nuevo Laredo in Tamaulipas, Villa Lerdo and Ventanas in Durango, Chilpancingo, Mexico city, Cordova, Las Vigas (*Höge*), Monclova in Coahuila, Guajuco in Nuevo Leon, Valle del Maiz (*Dr. Palmer*), Presidio de Mazatlan (*Forrer*), Puebla, Etla, Guanajuato, Orizaba, Oaxaca [4 5] (*Sallé*), Misantla (*H. H. Smith*), Temax in N. Yucatan (*Gaumer*); GUATEMALA, near the city (*Champion*); NICARAGUA (*Sallé*).

Var.? Elytris singulis maculis duabus magnis basalibus et duabus majoribus medianis transversim conjunctis, nigris. (Fig. 24.)

Hab. MEXICO, Vera Cruz (*Sallé*).

From an inspection of the types of *Harmonia V-nigrum* in Sallé's collection there is no doubt of the correctness of the synonymy given above.

C. abdominalis is a very abundant insect, but it becomes rarer below lat. 15°. There is only a single specimen from Nicaragua in Sallé's collection.

The specimens figured are—one of the typical form from Mexico city (fig. 22); one of a pretty variety (fig. 23) which occurred rather commonly at Temax in Yucatan; and one (fig. 24) from Vera Cruz, which is the only one I have seen thus marked.

7. **Cycloneda oculata.**

Coccinella oculata, Fabr. Ent. Syst. i. 1, p. 287 (1792) [1].
Cycloneda oculata, Crotch, Rev. Coccin. p. 166 [2].
Coccinella binotata, Say, Journ. Acad. Phil. v. p. 302 (1826) [3].
Daulis binotata, Muls. Spec. Col. Trim. sécur. p. 322 [4].

Hab. NORTH AMERICA [1 4], United States [2 3], Texas.—MEXICO, Monclova in Coahuila (*Dr. Palmer*), Guanajuato (*Sallé*), Teapa in Tabasco (*H. H. Smith*).

Crotch seems latterly to have regarded this insect as the black form of *C. abdominalis*; it is so placed in his "Revision of the Coccinellidæ of the United States," Trans. Amer. Ent. Soc. iv. p. 372 (April 1873). In his general "Revision," however, he remarks [2], "I do not know its pale form"; and, considering the blood-red colour of the elytral spot and the total absence of intermediate varieties, as well as the fact that among the large series of *C. abdominalis* we have received there is not one specimen varying in this direction, I do not think they can be so united.

Crotch [2] refers this insect to the *C. oculata* of Fabricius; it ought to be observed, however, that Fabricius's words, "Thorax ater, nitidus, utrinque macula magna, ro-

tunda, marginali, albida," do not apply to this insect, which has the thorax narrowly margined with white in front and just round the hind angles, the white margin often with three linear denticulations in front; also that it is described as a little larger than *C. cacti*.

8. **Cycloneda mæander.**

Daulis mæander, Muls. Spec. Col. Trim. sécur. p. 335 [1].
Cycloneda mæander, Crotch, Rev. Coccin. p. 166 [2].

Hab. MEXICO [1 2].—SOUTH AMERICA, Cayenne [1 2], S. Paulo [2].

Mulsant [1] gives "Mexico" as a locality for this species on the authority of Hope. I have not seen any specimens from there, and think the statement needs corroboration.

9. **Cycloneda gilardini.** (Tab. IX. fig. 25.)

Daulis gilardini, Muls. Monogr. Coccin. p. 214 [1].
Cycloneda gilardini, Crotch, Rev. Coccin. p. 166 [2].

Hab. MEXICO, Toxpam (*Sallé*).

The unique type is now before me from Sallé's collection. The locality "Colombia" seems to be an error of Mulsant's [1], and Crotch following him does not seem to have seen the insect. A second error is that Crotch says [2], "elytra each with ten spots:" this is due to a misprint in Mulsant's description, where "dix" is printed for "six," as may easily be seen by the context.

10. **Cycloneda electra.** (Tab. X. fig. 3.)

Subhemisphærica, nigra, perobsolete alutacea, vix punctata; capite prothoracisque lateribus late albidis; elytrorum basi, macula apicali subquadrata epipleurisque flavis. Long. 7, lat. 6 millim.

Hab. GUATEMALA (*Sallé*), San Gerónimo (*Champion*).

This species is evenly but not very strongly convex, the margin of the elytra a little expanded. The head is white; the antennæ and palpi yellowish. The thorax is black in the middle, this colour extending narrowly along the base on each side of the rather wide central vitta; the extreme apex of this vitta is, however, whitish. The base of the elytra is yellow for about a quarter of their length, but more widely so a little before the margin than at the suture. In one of the two examples before me the entire limb of the elytra is black; but in the one from Sallé's collection the black margin ceases at the shoulders and at the apex. The legs are black; the tibiæ on their internal sides and the tarsi are fuscous.

This species might almost be placed with *Neda*, but it has the elytra less expanded than in *N. marginalis*.

The specimen figured is the one from Sallé's collection.

NEDA.

Neda, Mulsant, Spec. Col. Trim. sécur. p. 274 (1850); Monogr. Coccin. p. 195 (pars).

The larger size and widened elytral margins are the only characters whereby this genus can at present be separated from *Cycloneda*; as restricted by Crotch it includes about eight American species.

1. Neda ostrina.

Coccinella ostrina, Erichs. Archiv für Naturg. xiii. 1, p. 182 [1].
Neda ostrina, Muls. Monogr. Coccin. p. 199 [2]; Crotch, Rev. Coccin. p. 168 [3].
Neda orbignyi, Muls. Spec. Col. Trim. sécur. p. 280 [4].
Neda peruviana, Muls. loc. cit. p. 281 [5]; Monogr. Coccin. p. 199 [6].

Hab. MEXICO [3].—SOUTH AMERICA, Colombia [2 4], Brazil [3], Peru [1 2 3 5 6].

Not received by us from Mexico; there is a specimen (perhaps the one alluded to by Mulsant) in Crotch's collection, from that of Chevrolat, so labelled, and this is the sole authority for the occurrence in the Northern continent of this species.

2. Neda marginalis.

Neda marginalis, Muls. Spec. Col. Trim. sécur. p. 277 [1]; Monogr. Coccin. p. 197 [2]; Crotch, Rev. Coccin. p. 168 [3].
Neda flavens, Muls. Opusc. Ent. iii. p. 41 [4]; Monogr. Coccin. p. 197 [5].

Hab. MEXICO [1 2 3], Ventanas in Durango, Chilpancingo in Guerrero, Jalapa (*Höge*), Omilteme 8000 feet, Amula 6000 feet (*H. H. Smith*), Misantla (*Flohr*), Cuernavaca, Cordova, Orizaba, Oaxaca (*Sallé*); GUATEMALA (*Sallé*), Tepan (*Conradt*), Dueñas, San Gerónimo (*Champion*); COSTA RICA, Caché (*Rogers*).

Crotch quotes [3] Brazil, but with doubt. I have seen no specimens of *N. marginalis* from the Southern continent. The locality of *N. flavens* was unknown to Mulsant [4 5].

Subfam. *CHILOCORIDES.*

This is one of the most natural divisions of the Coccinellidæ, well characterized by the front of the head forming a sort of clypeus surrounding the eye, and covering (in *Chilocorus* at least) the point of insertion of the antennæ, which thus lie in a fovea beneath it. The inner edge of the epipleuræ of the elytra is also generally divided behind the middle into two ridges, with a narrow channel between them for the reception of the margin of the hind body, thus closing very effectually the passage between it and the elytra. I do not find this character mentioned by authors, but it exists in several of the genera I have at present studied.

The species are distributed very widely over the whole world, *Chilocorus* alone being

represented almost everywhere; I have not, however, seen examples of it from further south in America than Brazil. *Exochomus* has one representative in Europe, *E. nigromaculatus*, which is, perhaps, the most widely distributed of any species of the family, being found from Northern Europe to the Cape of Good Hope, and from Siberia to Australia, yet, strangely enough, it seems to have disappeared from England.

Crotch has included *Platynaspis* in the Chilocorides, and that genus agrees with the rest of the subfamily in the structure of the clypeus, and on this ground I include *Corystes*; but some other genera (as, for instance, the Eastern *Cryptogonus*) are much more nearly related to the Hyperaspides, the presence of a seventh abdominal segment in the male externally, depending very much upon its extrusion or otherwise, being no doubt present, though possibly modified, in both subfamilies. *Cryptogonus* is indeed treated by Weise as congeneric with *Hyperaspis*.

CHILOCORUS.

Chilocorus, Leach, in Brewster's Edinb. Encycl. ix. p. 116 (1815); Mulsant, Spec. Col. Trim. sécur. p. 452; Chapuis, Gen. Col. xii. p. 244.

Chilocorus is a genus of about thirty-five species, distributed all over the world. One species has lately been described from Australia, but *Chilocorus* has hitherto been considered to be represented by the allied genus *Orcus* in that continent. Two species are found within our limits.

1. Chilocorus cacti.

Coccinella cacti, Linn. Syst. Nat. 12th edit. p. 584 (1767)[1]; Fabr. Ent. Syst. i. p. 287 (1792)[2], and Syst. Eleuth. i. p. 279 (1801)[3]; Oliv. Encycl. Méth. vi. p. 74[4], and Ent. vi. p. 1044, t. 1. f. 8[5]; Say, Bost. Journ. Nat. Hist. i. p. 202[6].

Chilocorus cacti, Leach, in Brewst. Edinb. Encycl. ix. p. 116 (1815)[7]; Hope, Col. Man. iii. p. 157[8]; Muls. Spec. Col. Trim. sécur. p. 459[9]; Crotch, Trans. Am. Ent. Soc. iv. p. 376[10], and Rev. Coccin. p. 184[11].

Hab. North America[1], United States, California[10 11], Texas[11].—Mexico[9 10 11], Pinos Altos in Chihuahua (*Buchan-Hepburn*), Guajuco in Nuevo Leon, Alvarez Mountains, Hacienda de San Miguelito, San Luis Potosi, Mexico city (*Dr. Palmer*), Ventanas in Durango, Tacambaro and Huetamo in Michoacan, Esperanza, Jalapa, Oaxaca (*Höge*), Puebla, Parada, Capulalpam, Santecomapan, San Andres Tuxtla, Vera Cruz, Campeche (*Sallé*), Orizaba (*Sallé*, *H. H. Smith*, *F. D. Godman*), Chilpancingo, Cuernavaca (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); British Honduras, R. Hondo (*Blancaneaux*); Guatemala (*Sallé*), Dueñas, Guatemala city, San Gerónimo (*Champion*) Nicaragua, Chontales (*Belt*); Costa Rica (*Van Patten*).—South America[11]; West Indies[11].

This insect has been long known to European entomologists, as well as the habit of

its larva of feeding upon the cochineal insect (*Coccus cacti*). The larva has been figured by Prof. Westwood in his 'Introduction to the Modern Classification of Insects,' i. p. 392, fig. 49 (24).

Chilocorus cacti appears to be abundant in those districts where the particular species of Cactaceæ grow which are infested by the *Coccus*, or to which it has been introduced, as in the case of *Nopalea coccinellifera*; but I have no direct evidence myself of the distribution of the *Chilocorus* in South America.

2. **Chilocorus bivulnerus.**

Chilocorus bivulnerus, Muls. Spec. Col. Trim. sécur. p. 460 [1]; Crotch, Trans. Am. Ent. Soc. iv. p. 376 [2], and Rev. Coccin. p. 185 [3].

Hab. North America [1], United States [2 3].—Mexico, Guanajuato (*Sallé*).

CURINUS.

Orcus, subgen. *Curinus*, Mulsant, Spec. Col. Trim. sécur. p. 472 (1850).
Curinus, Crotch, Rev. Coccin. p. 190.

A genus of doubtful value; it, however, separates the American from the Australian species of *Orcus*. According to Crotch it includes five representatives.

1. **Curinus cæruleus.** (Tab. X. fig. 4.)

Orcus cæruleus, Muls. Spec. Col. Trim. sécur. p. 472 [1].
Curinus cæruleus, Crotch, Rev. Coccin. p. 190 [2].

Hab. Mexico [1 2], Cordova, Jalapa, Oaxaca (*Höge*), Orizaba (*Sallé*, *H. H. Smith*); Guatemala (*Sallé*), Zapote, Capetillo, Dueñas, Chacoj in Vera Paz (*Champion*), Guatemala city 5000 feet (*Salvin*, *Champion*), Tepan (*Conradt*).—South America, Brazil [1 2], Chili [1 2].

Obtained in considerable numbers; the specimen figured is from Cordova.

AXION.

Exochomus, subgen. *Axion*, Mulsant, Spec. Col. Trim. sécur. p. 477 (1850).
Axion, Crotch, Rev. Coccin. p. 191.

The trivial character upon which Mulsant proposed this name for the first section of *Exochomus* hardly warrants its adoption. Three species from the United States, as well as the one from Mexico, belong to it.

1. **Axion plagiatus.**

Coccinella plagiata, Oliv. Ent. vi. p. 1044. no. 86, t. 7. fig. 102 (1808) [1].
Exochomus plagiatus, Muls. Spec. Col. Trim. sécur. p. 477 [2].
Axion plagiatus, Crotch, Rev. Coccin. p. 191 [3].

Hab. Mexico [2 3], Puebla, Guanajuato (*Sallé*), Morelia in Michoacan (*Höge*).

EXOCHOMUS.

Exochomus, Redtenbacher, Tentam. dispos. gen. et spec. Col. pseudotrim. p. 11 (1844); Mulsant, Spec. Col. Trim. sécur. p. 476 (pars); Chapuis, Gen. Col. xii. p. 246.

Exochomus, besides having the abdominal coxal fossettes "complete," has the tibiæ not toothed, but they are sometimes dilated angularly. About twelve species belong to it.

1. **Exochomus contristatus.**

Exochomus contristatus, Muls. Spec. Col. Trim. sécur. p. 492[1]; Crotch, Rev. Coccin. p. 193[2] (nec Trans. Am. Ent. Soc. iv. p. 377[3]).

Hab. MEXICO[1 2 3] (*Sallé*), Vera Cruz (*Sallé*), Jalapa (*Höge*).

This is not, as Mr. Crotch originally supposed it might be[3], a variety of *E. childreni*, Muls.

The type from Chevrolat's collection, now in the Cambridge Museum, is the only exponent of it in Crotch's collection; it is larger and more oval than *E. childreni*, and has the body beneath red.

2. **Exochomus marginipennis.** (Tab. X. figg. 5, 6.)

Coccinella marginipennis, Lec. Ann. Lyc. N. York, i. p. 173, t. 11. fig. 15[1].

Exochomus marginipennis, Muls. Spec. Col. Trim. sécur. p. 485[2]; Crotch, Trans. Am. Ent. Soc. iv. p. 377[3], and Rev. Coccin. p. 193[4].

Exochomus prætextatus, Melsh. Proc. Ac. Phil. iii. p. 180[5].

Brumus septentrionis, Weise (sec Horn, Trans. Am. Ent. Soc. xiii., Proc. Ent. Sect. p. xiv).

Hab. NORTH AMERICA[4 5], UNITED STATES[2], Colorado, New England, and Western States[3], Georgia[1].—MEXICO, Guajuco in Nuevo Leon (*Dr. Palmer*), Ventanas in Durango 2000 feet (*Forrer*), Cuernavaca in Morelos, Iguala in Guerrero, Cerro de Plumas, Tapachula in Chiapas (*Höge*).

We figure a specimen from Iguala (fig. 5) and one of a variety (fig. 6) from Cerro de Plumas.

3. **Exochomus championi.** (Tab. X. fig. 7.)

Transversim orbicularis, valde convexus, sanguineo-rufus, subtus corallinus; prothorace nigro, lateribus late et capite albis, elytris sanguineo-coccineis, macula scutellari et apice late nigris, scutello nigro. Long. $4\frac{1}{2}$–5 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Head whitish yellow, narrowly black at the base; clypeus scarcely produced round the eye, and the basal joint of the antennæ visible from above; antennæ and palpi yellow. Prothorax black, the edge in front sometimes very narrowly whitish, but often the black colour extends to the margin, the sides widely whitish yellow; the surface

visibly but very minutely and closely punctured. The elytra are together wider than long, the shoulders produced (but not so much as they often are in *Chilocorus*); blood-red, very obsoletely and finely punctured; the black scutellar mark is wanting in one example, but in another the suture is very narrowly black; the apex is occupied by a large squarish black patch, returning a little up the suture, and in the specimen with a black suture a little farther along the margin. The legs are coral-red. The front tibiæ are simple, grooved externally for the reception of the tarsi, which are nearly as long as the tibiæ.

Seven specimens were obtained, one of which is orange-red, but was obviously captured when quite freshly emerged and soft.

This species has the form of *Curinus*, and might have been placed in that genus, but for its wholly different colour, and that I do not consider there are structural differences to separate it from *Exochomus*.

4. **Exochomus tricoloratus.** (Tab. X. fig. 8.)

Transversim orbiculatus, niger; capite albo, ore, pedibus abdomineque flavis, prothoracis lateribus late albido-flavis, elytris crebre ac minute punctatis, macula subhumerali alteraque subapicali rotundata sanguineis. Long. 4, lat. $4\frac{1}{4}$ millim.

Hab. NICARAGUA, Chontales (*Belt*).

Head whitish yellow, the base black (but this part is generally hidden by the thorax), the mouth and trophi yellow. Thorax black, with the sides white, this colour taking the form of a round spot; in one example there is a triangular white spot in front. Elytra black, each with a small but very bright red spot at the shoulder, but not on the base, and another near the apex; in one specimen there is a minute red dot near the centre of each elytron. The elytra taken together are wider than the whole length of the insect; epipleuræ red, so as to correspond with the spots.

We figure the example with two red dots on each elytron, and the thorax with a white spot in front.

Two specimens.

5. **Exochomus scapularis.** (Tab. X. fig. 9.)

Nigro-subcæruleus, subtus rufus; epistomate, labro prothoracisque margine laterali anguste rufis, elytrorum angulo antico, macula quadrata, margineque subapicali gutta parva læte sanguineis; tibiis anticis angulariter dilatatis. Long. 4 millim.

Hab. MEXICO, Jalapa, Vera Cruz, Tapachula in Chiapas (*Höge*).

Var. margine subapicali concolore.

Hab. MEXICO, Iguala in Guerrero (*Höge*), Amula in Guerrero 6000 feet (*H. H. Smith*); NICARAGUA, Chontales (*Janson*).

Head yellow beneath, and with the mouth, front, and trophi of the same colour, the

base black in an indeterminate manner between the eyes. Thorax and elytra blue-black, scarcely visibly punctate; the former with the lateral margins very narrowly yellowish, the latter with a bright red spot at the front angles, and, in the two specimens from Jalapa and Vera Cruz, with a small linear spot of the same colour, and very indeterminate, just within the margin before the apex.

The humeral spot varies a little in size and shape: in the specimen from Chontales it is square, and a little more oblong than in any of the others, in which it is transverse and placed just below the callus.

In all the specimens the front tibiæ are angularly widened. The specimen from Iguala has the elytra very slightly brownish, and with brown translucent margins, being probably less matured. I think it possible that this insect should be associated with *Cladis nitidula*, a species from Cuba and other West-Indian Islands. I do not, however, regard *Cladis* as differing materially from *Exochomus*.

One specimen from each locality are all that have been obtained. Our figure represents the example from Jalapa.

6. **Exochomus apicatus.**

Orbicularis, nigro-cyaneus; capite, corpore subtus, prothoracis limbo antico et laterali, elytrorumque margine reflexo, et apicibus, luteis; elytris distincte subtiliter crebre punctatis. Long. $2\frac{1}{2}$ millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Head pale yellow, infuscate towards the base, in one example entirely black; thorax with the anterior margin only brown at the extreme edge, the sides narrowly margined with yellow, but in certain examples (as the one with the head black) this is reduced to a faint mark at the front angles; elytra blue-black, with the reflexed narrow margin brown-red, widening at a third from the apex, but the yellow colour narrowed again at the sutural angle; legs and body beneath yellow.

Six specimens of this insect were obtained, three of them near Bugaba. It is possible that the darker-headed specimens are of one sex, but this is uncertain.

7. **Exochomus bisbinotatus.** (Tab. X. fig. 10.)

Niger, æque ac distincte punctatus; prothoracis margine antico, lateribus, elytrorum margine laterali et epipleurali, maculisque duabus rotundis, una basin attingente, una subapicali, tibiis tarsisque flavis, femoribus infuscatis. Long. 2 millim.

Var. capite etiam flavo.

Hab. MEXICO (*Sallé*), Motzorongo in Vera Cruz (*Flohr*); BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, Coban in Vera Paz (*Champion*).

Head pitchy black or yellow (probably differing in the sexes). Thorax in the black-headed examples only faintly reddish at the anterior margin, and with the front angles yellowish; in the examples with yellow heads, the front margin narrowly yellow with the sides more broadly yellow. The reflexed margin of the elytra and the epipleuræ

yellow, each elytron also with two yellow spots, the basal one of which is the larger. The body beneath is pitchy with pale sutures, and the legs indeterminately pitchy, with paler tibiæ and tarsi. Four examples.

Obs. This insect is labelled "*Exochomus heirrichi*" in the Sallé collection, but I have not found the description of such a species.

8. **Exochomus sallæi.**

Ater; elytris coccineis, singulis macula subapicali rotunda nigra. Long. 3 millim.

Hab. Mexico (*Sallé*).

Smooth and shining, the punctuation scarcely visible; the size and coloration somewhat similar to that of *E. contristatus*, Muls., but, besides the two spots of the elytra, the body is black. The extreme limb of the elytra is, as usual, blackish. One example.

9. **Exochomus högei.** (Tab. X. fig. 11.)

Ater, nitidus; elytris coccineis, singulis punctis duobus parvulis discoidalibus, et uno communi apicali suturaque in medio, nigris. Long. 4 millim.

Hab. Mexico, Villa Lerdo in Durango (*Höge*).

Smooth, shining, and with the elytra very convex for this genus. The margins are scarcely, if at all, expanded, the limb very narrowly black. Of the elytral spots that nearest the base is, in our single specimen, the smaller of the two, and is placed on the scarcely perceptible callus; the second is placed a little behind the middle; the apical spot is similar to that of the East-Indian *E. uropygialis*. The body and legs are black, only the tarsi are reddish. One example.

PENTILIA.

Pentilia, Mulsant, Spec. Col. Trim. sécur. p. 502 (1850); Chapuis, Gen. Col. xii. p. 234.

Three species only have at present been referred to this genus, which is very unsatisfactorily characterized. It has the appearance of a small *Chilocorus*.

1. **Pentilia egena.**

Chilocorus egenus, Dej. Cat. 3rd edit. p. 460 [1].
Pentilia egena, Muls. Spec. Col. Trim. sécur. p. 502 [2]; Crotch, Rev. Coccin. p. 199 [3].

Hab. Panama, Bugaba (*Champion*).—Brazil [2], Rio Janeiro [3], Bahia [3].

The males are greenish; they have the head yellow and the angles of the thorax broadly margined with the same colour. The female, of which we have received but one example, is entirely black above.

2. **Pentilia (?) convexa.** (Tab. XI. fig. 1.)

Breviter ovata, valde convexa, nigra, nitida ; capite, prothoracis margine antico et angulis anterioribus tenuiter, pedidus abdomineque flavis, prothorace elytrorumque basi æneo-micantibus, subtiliter crebre punctatis. Long. 4 millim. ♂.

Mas capite prothoracisque margine antico flavis.

Hab. Panama, Bugaba (*Champion*).

Bluish black above, the thorax and base of the elytra brassy; head, legs, and abdomen, and the sides of the thorax nearly as far as the hind angles, and also the front margin, very narrowly, yellow. Elytra very convex, and viewed laterally rather gibbous, the humeral callus distinct, very finely but thickly and distinctly punctured. The tibiæ are compressed on the outer side, and a little expanded towards their base.

This insect, of which we have only obtained a single male example, is twice as large as *Pentilia egena*, and is more convex than that species; the base of the thorax is also less **V**-shaped, the bases of the elytra being less inclined. I cannot at present associate any specimens from Bugaba with *P. convexa* as females, the only example of that sex from that locality being apparently referable to *P. egena*, the male of which, in addition to the differences pointed out above, has the front angles of the thorax broadly yellow and more rounded.

3. **Pentilia castanea.**

Pentilia castanea, Muls. Spec. Col. Trim. sécur., App. p. 1036 [1]; Crotch, Rev. Coccin. p. 199 [2].

Hab. Mexico [2].—South America [1 2].

The specimen referred to by Crotch [2] is in his collection, but it is without precise indication of the locality. The Mexican habitat needs confirmation.

4. **Pentilia discors.**

Atra, nitida; capite, prothorace, abdomine pedibusque albido-flavis, corpore subtus nigro-piceo.
Mas? elytris disco apiceque indistincte sanguineo notatis, prothorace toto flavo.
Femina? prothoracis dimidio basali nigro. Long. 2 millim.

Hab. Guatemala, Rio Maria Linda 500 feet (*Champion*).

This little species is of a broadly ovate form, almost orbiculate; it is very finely, but distinctly punctate, and has the humeral callus rather distinct and the lateral margins a little expanded.

We have received only one specimen of each of the supposed sexes; they were both met with at the same time and place, and, though differing in colour, I have little doubt they are correctly associated as one species.

CRYPTOGNATHA.

Cryptognatha, Mulsant, Spec. Col. Trim. sécur. p. 497 (1850); Crotch, Rev. Coccin. p. 206; Chapuis, Gen. Col. xii. p. 236.
Œneis, Mulsant, Spec. Col. Trim. sécur. p. 500.

Chapuis, following Crotch, has united these genera. I have not seen a true *Œneis*; the three species from Ceylon referred to it are probably not congeneric. Exclusive of these, about fifteen species of *Cryptognatha* have been described; the area of its distribution appears to be from the Southern States of North America to Brazil.

1. **Cryptognatha auriculata.**

Cryptognatha auriculata, Muls. Spec. Col. Trim. sécur. p. 497 [1]; Crotch, Rev. Coccin. p. 206 [2].

Hab. MEXICO, Teapa (*coll. Crotch*).—SOUTH AMERICA, Colombia [1 2], Cayenne [2].

I record this species, on the authority of a specimen in Crotch's collection labelled Teapa; it is entirely yellow and shining.

2. **Cryptognatha circumdata.** (Tab. X. fig. 12.)

Atra, nitidissima; capite, prothorace (medio excepto), elytrorum marginibus, pedibus et corpore infra sanguineo-rufis. Long. 3 millim.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*).

Hemispherical, very shining, almost glabrous, the sparse and fine punctuation being easily visible only on the sides.

3. **Cryptognatha gemellata.**

Cryptognatha gemellata, Muls. Spec. Col. Trim. sécur. p. 498 [1]; Crotch, Rev. Coccin. p. 206 [2].

Hab. MEXICO? [1 2].—SOUTH AMERICA, Cayenne [2].

We have not received specimens of this species; and the Mexican locality is not well authenticated.

4. **Cryptognatha flaviceps.**

Cryptognatha flaviceps, Crotch, Rev. Coccin. p. 207 [1].

Hab. MEXICO, Yucatan [1] (*coll. Crotch*); BRITISH HONDURAS, Rio Hondo (*Blancaneaux*); PANAMA, Volcan de Chiriqui 4000 feet, Tolé (*Champion*). — AMAZONS, San Paulo [1], Santarem [1].

This small species is a little more than one millimetre in length: "hemispherical, shining, black; head ochreous, thorax with the sides ochreous, base finely margined, rather closely punctulate; elytra black, sparsely and finely punctulate, more strongly so near the margin; legs whitish ochreous."

"♀ head black."

CORYSTES.

Corystes, Mulsant, Spec. Col. Trim. sécur. p. 506 (1850); Crotch, Rev. Coccin. p. 208; Chapuis, Gen. Col. xii. p. 249.

A single species only is known of this genus. It is allied to *Chilocorus* by the

structure of the epistome, which partly divides the eye. Crotch, however, placed it at the beginning of the "Hyperaspides."

1. **Corystes hypocrita.** (Tab. X. fig. 13.)

Corystes hypocrita, Muls. Spec. Col. Trim. sécur. p. 507 [1]; Crotch, Rev. Coccin. p. 208 [2].

Hab. NICARAGUA, Chontales (*Belt, Janson*).—GUIANA, Cayenne [1 2]; AMAZONS, Ega [2], Santarem [2], San Paulo [2].

The example figured is from Chontales.

Subfam. *HYPERASPIDES.*

The Hyperaspides are, as Chapuis remarks, chiefly distinguished by the epipleuræ of the elytra being furnished with fossæ, which are usually deep, and which permit the knees of the middle and hind legs to move over them with facility. In addition to this character, we here meet with another, possessed by very few Coccinellidæ, viz. the presence of a tooth on the front tibiæ.

The subfamily as here restricted, by the exclusion of *Corystes*, *Pentilia*, and *Cryptognatha* (the two latter of which were included in the Hyperaspides by Chapuis), contains but few genera, yet the species are numerous, those of the genus *Hyperaspis* alone amounting to about two hundred. By far the larger number of these are from the New World, several, however (including the type of *Hyperaspis*), are European, and a few have been described from Africa.

THALASSA.

Thalassa, Mulsant, Spec. Col. Trim. sécur. p. 511 (1850); Crotch, Rev. Cocc. p. 209.
Menoscelis, Chapuis, Gen. Col. xii. p. 233.

Chapuis has united *Thalassa* with *Menoscelis.* Crotch, however, while placing *M. glauca* in *Thalassa*, retained the name *Menoscelis* for *M. insignis*, which is a large and differently coloured South-American insect.

1. **Thalassa pentaspilota.** (Tab. X. fig. 14.)

Chilocorus pentaspilotus, Chevr. Col. Mex., Cent. ii. no. 124 (1835) [1].
Thalassa pentaspilota, Crotch, Rev. Coccin. p. 209 [2].
Thalassa pentastigma, Muls. Spec. Col. Trim. sécur. p. 512 [3].

Hab. MEXICO [1 2 3], Jalapa (*Höge*); GUATEMALA, Capetillo (*Champion*).—CUBA [2].

An apparently rare insect, of which we have only received three examples; it was originally sent by Sallé to Chevrolat.

2. **Thalassa montezumæ.** (Tab. X. fig. 15.)

Thalassa montezumæ, Muls. Spec. Col. Trim. sécur. p. 512 [1]; Crotch, Rev. Coccin. p. 209 [2].

Hab. NORTH AMERICA, New Orleans [2].—MEXICO [1 2], Ventanas in Durango, Matamoros

Izucar, Puebla, Jalapa (*Höge*), Vera Cruz, Playa Vicente, Yolos (*Sallé*); GUATEMALA, El Reposo (*Champion*).

This insect occurred singly for the most part at each of the localities given, and does not appear ever to be common.

The head is entirely yellow in the male, and the thorax in the same sex has the anterior margin and angles very narrowly margined with yellow.

The figure is taken from a male from Jalapa, where Höge met with both sexes.

3. **Thalassa glauca.**

Menoscelis glauca, Muls. Spec. Col. Trim. sécur. p. 510 [1].
Thalassa glauca, Crotch, Rev. Coccin. p. 209 [2].
Thalassa reyi, Muls. Spec. Col. Trim. sécur. p. 515 (♀) [3].

Hab. GUATEMALA (*Sallé*), near the city (*Champion*), Tepan (*Conradt*); COSTA RICA (*Van Patten*).—SOUTH AMERICA [1], Brazil [2 3].

This insect varies somewhat in colour, the blue specimens being probably the males.

Our examples have yellow heads, but in nearly all the head is greenish at the base and on the inner side of the eyes.

BRACHYACANTHA.

Brachyacantha, Chevrolat, in d'Orbigny's Dict. Univ. d'Hist. Nat. ii. p. 705 (1842); Mulsant, Spec. Col. Trim. sécur. p. 520; Crotch, Rev. Cocc. p. 210; Trans. Am. Ent. Soc. iv. p. 377; Chapuis, Gen. Col. xii. p. 228.

Brachyacantha consists of a little group of species which, with two exceptions, are peculiar to the northern continent of America, and are remarkable for their strong resemblance in form, as well as in structure, to some genera of Phytophaga, especially, perhaps, to those of the Cryptocephalinæ, such as *Monachus* and *Scolochrus*. The genus is not well separated from *Hyperaspis*, both Crotch and Chapuis referring to the arming of the front tibiæ with a spine as a permanent distinction. Good sexual characters, however, exist in several species of *Brachyacantha* on the underside of the ventral segments. No author, excepting Crotch for one species (*B. dentipes*), appears to have noticed these. About twenty species have been described; but from the undue importance given by Mulsant and others to the markings alone, it is clear that several of these can only be regarded as varieties. The males of the species of the whole sub-family may generally be recognized by their yellow heads, and the paler colouring of their legs and other parts; but the structural characters above alluded to, and the presence of an additional segment (the seventh ventral one), should always be noticed. The absence of a basal marginal line to the thorax is, I think, quite illusory, for

this line, merely indicating the finely impressed margin, cannot be seen in many cases when the thorax is not detached from the base of the elytra. And this is the view Chapuis has taken of the value of this character, which Mulsant has used with some insistance.

1. **Brachyacantha lepida.** (Tab. X. fig. 16.)

Brachyacantha lepida, Muls. Spec. Col. Trim. sécur. p. 523[1]; Crotch, Rev. Coccin. p. 210[2]; Trans. Am. Ent. Soc. iv. p. 378[3].

Hab. North America, United States [1], Texas [3].—Mexico [1 2 3], Toxpam, Mirador (*Sallé*), Cordova (*Sallé*, *Höge*), Orizaba (*Sallé*, *H. H. Smith, and F. D. G.*), Atoyac in Vera Cruz (*H. H. Smith*), Jalapa (*Höge*, *Flohr*), Cerro de Plumas, Tapachula (*Höge*); British Honduras, R. Hondo, R. Sarstoon, Belize (*Blancaneaux*); Guatemala, near the city (*Salvin*, *Champion*), Chiacam, Senahu, Sabo, and Purula in Vera Paz, Zapote, Capetillo, Dueñas (*Champion*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*).

Var. α. Maculis rufo-piceis.

Hab. Mexico, Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*).

Var. β. Maculis confluentibus.

Hab. Mexico, Tapachula in Chiapas (*Höge*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, San Gerónimo (*Champion*).

B. lepida is very variable as regards size (the larger examples being 4 millim. long, while some occur of scarcely half that size) and colour, and also in the degree to which the markings become confluent.

Of the var. α, the colour of which may be due to immaturity, Mr. H. H. Smith met with a very large number at Teapa in Tabasco; and these appear to be all of the typical form, *i. e.* the spots are detached. Varieties with the two discoidal spots just united by a line occurred, in company with typical forms, at the city and elsewhere in Guatemala. In the variety which I designate β the discoidal spots are united together and to the central spots, as well as to the subapical spot, leaving six triangular yellow spots on each elytron—one on the base near the scutellum, with two others following almost in a line, and the yellow margin is dilated into three spots corresponding to these. Of this variety numerous specimens were met with at Tapachula. I have not observed any structural character in the abdomen of this insect.

2. **Brachyacantha westwoodi.** (Tab. X. fig. 17.)

Brachyacantha westwoodi, Muls. Spec. Col. Trim. sécur. p. 520 (♂)[1]; Crotch, Rev. Coccin. p. 211[2].
Brachyacantha bipartita, Muls. Spec. Col. Trim. sécur. p. 521 (♀)[3]; Crotch, Rev. Coccin. p. 211[4].

Hab. Mexico [1–4], Toxpam, Yolos (*Sallé*), Jalapa (*Höge*), Atoyac in Vera Cruz (*H. H. Smith*).

An inspection of the type of *B. bipartita* in the Crotch collection leaves no doubt in my mind that the above names apply to the sexes of the same species. It is apparently not common.

We figure a male from Toxpam.

3. **Brachyacantha aymardi.** (Tab. X. fig. 18.)

Nigra; capitis fronte maculisque duabus magnis transversis ad angulos anticos prothoracis flavis; elytris rufis, sutura tenuiter, macula communi suturali juxta basin, et duabus alteris discoidalibus, una subhumerali, una majore subapicali, nigris. Long. 4·5 millim. ♀.

Hab. MEXICO, Parada (*Sallé*).

Two specimens of this species are before me, agreeing very closely; they are clearly allied to *B. westwoodi*, but are larger than that species (with the exception of one specimen from Yolos, of which the determination is a little doubtful), and differ, moreover, in the large yellow mark on the anterior angles of the thorax. This mark occupies the whole angle, and extends along the side almost to the base; it is prolonged obliquely into the disc, leaving the front margin black. The body beneath is black, the tibiæ and tarsi yellow.

This insect was labelled *Brachyacantha aymardi* in the Sallé collection.

4. **Brachyacantha cryptocephalina.** (Tab. X. fig. 19.)

Nigra; elytris sanguineis, sutura tenuiter, punctisque tribus nigris, uno subhumerali, duobus pone medium transversim approximatis, nigris. Long. vix 6 millim. ♀.

Hab. MEXICO, Ventanas in Durango (*Höge*).

Entirely black, with the exception of the elytra, which are of a rich blood-red colour, with the suture (narrowly at the base, more widely at the apex), and three small spots on each, black.

This fine species cannot be confounded with *B. aymardi*, as it is larger, the head and thorax are wholly black, and the elytral markings are different.

The single specimen obtained by Höge is the only one I have seen. It is apparently a female.

5. **Brachyacantha dentipes.**

Coccinella dentipes, Fabr. Syst. Eleuth. i. p. 381 (1801)[1].

Brachyacantha dentipes, Muls. Spec. Col. Trim. sécur. p. 525[2]; Crotch, Rev. Coccin. p. 211[3]; Trans. Am. Ent. Soc. iv. p. 378[4].

Hab. NORTH AMERICA, United States[3], Carolina[1], Georgia[4], Kansas[4], Illinois[4], Texas[4].—MEXICO[4], Jalapa (*M. Trujillo*), Atoyac and Chilpancingo (*H. H. Smith*), Temax in North Yucatan (*Gaumer*).

Var. *α*. "Ovalis, valde convexa, nigra, nitida, dense punctulata, thorace macula magna laterali rotundata, elytris altera subreniformi, subapicali flavo-rufis ornatis; antennis, palpis pedibusque flavo-rufis, femoribus infuscatis." (*Leconte.*)

Brachyacantha quadrillum, Lec. Proc. Acad. Phil. 1858, p. 89[5]; Trans. Am. Ent. Soc. iv. p. 378[6]; Crotch, Rev. Coccin. p. 211[7].

Hab. NORTH AMERICA, Texas [5–7].

Var. β. Prothorace flavo, basi fusco-notato.

Hab. MEXICO, Playa Vicente (*Sallé*), Atoyac in Vera Cruz (*H. H. Smith*).

Var. γ. Elytris macula subapicali deficiente.

Brachyacantha subfasciata, Muls. Spec. Col. Trim. sécur. p. 527[8]; Crotch, Rev. Coccin. p. 211[9].

Hab. MEXICO [8 9].

Var. δ. Elytris nigris, macula apicali flava.

Brachyacantha erythrura, Muls. Spec. Col. Trim. sécur. p. 530[10]; Crotch, Rev. Coccin. p. 211[11].

Hab. MEXICO [10 11], Atoyac in Vera Cruz (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); GUATEMALA (*coll. Gorham*); COSTA RICA (*Van Patten*), Volcan de Irazu 6000 to 7000 feet (*Rogers*).

Var. ϵ. "Spots confluent, thorax entirely orange, elytra black at the base and with two medial spots black." (*Crotch.*)

Brachyacantha tau, Lec. Col. of Kansas and Eastern New Mexico, p. 28 (1859)[12]; Crotch, Trans. Am. Ent. Soc. iv. p. 378[13]; Rev. Coccin. p. 212[14].

Hab. NORTH AMERICA, Fort Riley, Kansas [12–14].

The male of this species, besides having the head and legs entirely yellow, has the third ventral segment with the hind margin raised into two tubercles in the middle, the fourth, fifth, and sixth segments each with a semicircular impression forming a sort of fovea.

I find great difficulty in determining whether certain specimens from various localities in Mexico and Guatemala are to be referred to this species or to *B. erythrocephala.* When the two anterior spots on the elytra of the latter are united, the colour-distinction is lost, and the more oblong form of this species passes insensibly into that of *B. erythrocephala.* I have joined *B. erythrura*, Muls., with *B. dentipes*, as beyond colour there is really no difference; it seems to be a rather scarce variety in which the anterior fascia is obliterated, and intermediate forms occurred with it at Atoyac. For the same reason *B. subfasciata* is now sunk in a synonym.

6. Brachyacantha pygidialis.

Brachyacantha pygidialis, Muls. Spec. Col. Trim. sécur. p. 534[1]; Crotch, Rev. Coccin. p. 212[2].

Hab. MEXICO [1 2], Oaxaca (*Sallé*).

There are three specimens of this species in the Sallé collection. These are of the size of the larger examples of *B. dentipes*, and with the oblong form of that species, but with four distinct and large yellow spots on each elytron, the basal one of which is, in the male, prolonged outwardly so as to extend along the whole of the base; then follow two median spots (not united) and a subapical spot. In the male the head and thorax are yellow, the base of the latter black for rather more than half its length in

the middle; and the abdomen from the third segment is broadly impressed, but the margin of the third is not raised or tubercular.

7. **Brachyacantha conjuncta.** (Tab. X. fig. 20.)

Brachyacantha conjuncta, Muls. Spec. Col. Trim. sécur. p. 536 [1]; Crotch, Rev. Coccin. p. 212 [2].

Hab. Mexico [1 2], Ventanas in Durango (*Höge*), Capulalpam, Etla, Yolotepec, Juquila (*Sallé*); Costa Rica, Caché (*Rogers*).

This species is labelled *Brachyacantha compromissa*, Muls., in the Sallé collection; it is allied to *B. pygidialis*, but is a shorter and rounder insect. *B. conjuncta* varies considerably in size, from about $2\frac{1}{2}$–5 millim. in length. In one large female from Etla the head and thorax are black, only a small dot on the former and the tips of the front angles of the latter being red, and the underside and legs are black in this specimen; while in a smaller male, from Yolotepec, the head, the greater part of the thorax, and the legs are yellow.

The specimen figured is one from Etla.

8. **Brachyacantha erythrocephala.**

Coccinella erythrocephala, Fabr. Mant. Ins. p. 61 (1787) [1].
Brachyacantha erythrocephala, Crotch, Rev. Coccin. p. 211 [2].
Coccinella bistripustulata, Fabr. Syst. Eleuth. i. p. 383 [3].
Brachyacantha bistripustulata, Muls. Spec. Col. Trim. sécur. p. 528 [4].

Hab. North America, United States [2 4].—Mexico [4], Presidio, San Blas (*Forrer*), Ventanas in Durango (*Forrer*, *Höge*), Jalapa (*Höge*), Cordova (*Höge*, *Sallé*), Orizaba (*Sallé*, *H. H. Smith*, *and F. D. G.*), Guanajuato, Capulalpam, Puebla, Toxpam, Oaxaca (*Sallé*), Xucumanatlan, Tepetlapa, Amula, La Venta, and Venta de Zopilote in Guerrero, Cuernavaca in Morelos, Atoyac and Fortin in Vera Cruz, Teapa in Tabasco (*H. H. Smith*), Temax in North Yucatan (*Gaumer*); British Honduras, R. Sarstoon (*Blancaneaux*); Guatemala, Aceituno 5000 feet (*Salvin*), Chiacam, Purula, Senahu, Sinanja, and San Gerónimo in Vera Paz, Guatemala city, Dueñas, Capetillo, Zapote, Paso Antonio (*Champion*); Honduras (*Sallé*); Nicaragua, Chontales (*Belt*, *Janson*); Costa Rica (*Van Patten*), Volcan de Irazu 6000 to 7000 feet, Caché (*Rogers*); Panama, Volcan de Chiriqui 2000 to 3000 feet, David, Tolé (*Champion*).—South America [3], Colombia [4], Peru.

9. **Brachyacantha decempustulata.**

Hyperaspis 10-*pustulata,* Melsh. Proc. Acad. Phil. iii. p. 179 (1847) [1].
Brachyacantha decempustulata, Crotch, Rev. Coccin. p. 211 [2].
Brachyacantha octostigma, Muls. Spec. Col. Trim. sécur. p. 539 [3]; Crotch, Rev. Coccin. p. 212 [4].
Brachyacantha ursina, var. *a,* Crotch, Trans. Am. Ent. Soc. iv. p. 378 [5].

Var. Elytris maculis flavis confluentibus.
Brachyacantha bollii, Crotch, Trans. Am. Ent. Soc. iv. p. 879 [6].

Hab. North America, United States [2 5], Pennsylvania [1], Texas [6].—Mexico [3 4], Orizaba, Tuxtla, Toxpam (*Sallé*), Cerro de Plumas, Zacualtipan in Hidalgo (*Höge*); Guatemala, Chiacam, Senahu, Sinanja, and San Gerónimo in Vera Paz, Dueñas (*Champion*); Panama, Bugaba, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

After the inspection of a large number of specimens, and of the types in Crotch's collection, there is no other course open to me than to unite the various names quoted above under one species, while I cannot concur in regarding them as synonymic with *B. ursina*—the latter being a more oblong insect.

The females of *B. decempustulata* have but four yellow spots on each elytron, while in the males there is a small yellow spot on the humeral angle as well; the males have also the abdomen impressed in the middle from the second segment to the fifth.

From *Hyperaspis jucunda* and *H. jocosa*, Muls. (which are similarly marked), the generic character of a sharp tooth on the exterior edge of the anterior tibiæ will at once separate it; but it will be observed that the shoulder-spot is always more prolonged down the side in the males of *H. jocosa*, and that the three large apical spots are more closely packed, the lateral one in the middle being always a little nearer the apex in *H. jucunda*.

B. decempustulata varies very much in size. The punctuation, as Leconte has remarked, is deeper and more distinct than in *B. ursina*.

B. bollii, Crotch, appears to me to be nothing but a colour-variety of this insect, and occurs with it at Dallas in Texas.

Obs. Three exponents of *Hyperaspis billoti*, Muls., in Crotch's collection, labelled "Philad.," and which are *Brachyacanthæ*, belong to this species; but they may probably be wrongly identified with Mulsant's insect, which is South American.

10. **Brachyacantha ursina.**

Coccinella ursina, Fabr. Mant. Ins. i. p. 61 (1787) [1].

Brachyacantha ursina, Muls. Spec. Col. Trim. sécur. p. 532 [2]; Crotch, Rev. Coccin. p. 211 [3]; Trans. Am. Ent. Soc. iv. p. 378 (partim) [4].

Hab. North America [1 3], United States, from Lake Superior to Texas [4].—Mexico, Ciudad in Durango (*Höge*, *Forrer*), Ventanas in Durango (*Höge*).

Crotch [4] united *B. flavifrons*, Muls., *B. decempustulata* and *B. basalis* (Melsh.), and *B. albifrons* (Say) with this species; but this view is not borne out by his collection, and it seems to have been arrived at rather hastily on the exponents of those species in Leconte's collection. Judging from the specimens of *B. decempustulata* in Crotch's collection and my own, and also from those from Mexico, I think the insect is distinct from small examples of *B. ursina* with very small spots, which may be recognized by their more oblong form, more narrowed in front.

11. **Brachyacantha cachensis.**

Pallide albido-testacea, nitida, corpore subtus piceo; prothorace maculis tribus cuneiformibus conjunctis, una mediana, duabus basalibus, elytris sutura maculisque duabus in singulis, nigris. Long. 4 millim. ♂.
Mas segmentis ventralibus medio late impressis.

Hab. Costa Rica, Caché (*Rogers*).

At first sight resembling *B. lepida*, but to be immediately distinguished from it or from any other *Brachyacantha* known to me by the marking of the prothorax, which is like a broad-arrow ⸸, with the barbs lying on the **V**-shaped base. The suture has not a distinct spot (as it has in *B. lepida*), but is more widely pitchy-black immediately below the scutellum than at the apex. The legs are entirely pale testaceous.

The male character of an impressed fossa along the middle of the abdomen is very distinct, but its sides are apparently not tubercular.

A single specimen, in rather bad condition.

12. **Brachyacantha fenestrata.**

Breviter ovata, nigro-picea, nitida; capite, prothoracis lateribus late, et maculis duabus discoidalibus, elytrorum maculis quinque pedibusque, flavis. Long. 3·25 millim.
Mas capite et prothoracis margine antico albido-flavis, abdomine medio fossulato.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*); Costa Rica, Caché (*Rogers*); Panama, Volcan de Chiriqui, Bugaba (*Champion*).

This species is one of a series which, with some Hyperaspides, have the elytra marked almost exactly alike, viz. with five yellow spots on each, as in *B. decempustulata*. *B. fenestrata* may, however, be easily recognized by the thorax having two pale oval spots near the middle of the base, almost but not quite touching it. Of the two discoidal elytral spots, the posterior one seems always to be a little smaller than the basal one; of the three marginal ones, the humeral spot is small, occupying the angle, the middle one is just between the two discoidal spots, and the apical one is more oblong than in most of its allies. These markings are also very pale yellow, almost white in some male examples.

The fossa on the abdomen of the males is very distinct, and the middle of the metasternum is also impressed; the margins of the segments are raised in the middle and at the sides of the fossa almost tuberculate. This structure is common to the *Brachyacanthæ* that have the abdomen impressed, but seems to vary in degree.

The female has the head yellow, but the front of the thorax is pitchy-black.

A very extensive series of specimens were obtained by Mr. Champion, but I have only seen one from Costa Rica.

The specimens from Teapa diverge a little from the type in having the dark mark on the thorax divided by a wedge-shaped spot in front, so as to resemble the letter **M** more than in the Panama specimens.

The Bugaba examples, of which there are about a dozen, have the dark markings of a pitchy-red colour.

HYPERASPIS.

Hyperaspis, Chevrolat, in D'Orbigny's Dict. univ. d'Hist. Nat. vi. p. 780 (1849); Redtenbacher, Germar's Zeitschr. v. p. 122; Mulsant, Spec. Col. Trim. sécur. p. 649; Chapuis, Gen. Col. xii. p. 229; Crotch, Rev. Coccin. p. 213.
Cleothera, Mulsant, Spec. Col. Trim. sécur. p. 541.
Hinda, Mulsant, loc. cit. p. 518.

Hyperaspis differs from *Brachyacantha* in having the front tibiæ unarmed; in some species the front tibiæ are angularly widened, but they cannot be termed "denticulate." The abdomen in the male is impressed and fossulate in some species, while in others it appears not to be so.

A very large number of species must be referred to the genus—the typical species (*H. reppensis*) and a few others are European, a few are Asiatic or African, but by far the larger number of those described are from America, where the genus has an extensive range, from Lake Superior to Brazil. About 168 species have been described. I have seen no species from the far East or from Australia which can properly be referred to this genus, but in Africa it appears to be distributed over the whole continent. The species are generally of small size.

Section A. *Front tibiæ externally compressed, and with a foliate expanded edge and an angular projection before the apex.* ♂ *with the abdomen impressed.*

1. **Hyperaspis cercyonoides.** (Tab. X. figg. 21, 22.)

Oblongo-ovata, picea, nitida; creberrime, minute, distincte punctata; capite, prothorace (basi prætermisso), pedibus elytrorumque marginibus flavo-testaceis; prothoracis basi, elytrorum disco nigris. Long. 3–4 millim.

Var. α. Elytrorum disco sanguineo, singulis plagia nigra sæpe ante apicem confluente.

Var. β. Elytris disco sanguineo, flavo-marginatis, juxta callo humerali fusco-maculatis.

Hab. PANAMA, Volcan de Chiriqui 2500 to 6000 feet (*Champion*).

Head and thorax yellow or blood-red, the base of the latter having a black transverse patch, which is indeterminate in front, shading off there into red, or sometimes divided almost to its base by a red line. Elytra margined with yellow or blood-red, the apex very widely, so as to appear like a spot, their disc very variable in colour—wholly black, or black with a blood-red oblong spot from the base along the suture to the middle, or with this spot occupying all the sutural region and joining the apical yellow margin: in some specimens they are red, with a yellow margin and two or three fuscous dots near the humerus; in others, again, they are entirely rich castaneous-red, with a dark spot near the apex on the suture, or even without any marking or border. The sterna are pitchy-black, the abdomen pitchy.

The legs are red or pale; the tibiæ all a little dilated, and with a minute denticulation near their apices, from which to the apex they are cut off obliquely.

Numerous specimens were obtained by Mr. Champion.

Section B. *Front tibiæ simple.*

i. *Elytra black, with five yellow spots on each, at least in the male.*

2. **Hyperaspis jocosa?** (Tab. XI. fig. 2.)

Cleothera jocosa, Muls. Spec. Col. Trim. sécur. p. 632 (♀) [1].

Hyperaspis jocosa, Crotch, Rev. Coccin. p. 222 (♀) [2].

Cleothera bis-quatuorpustulata, Muls. Spec. Col. Trim. sécur. p. 634 [3].

Breviter ovata, nigro-picea, nitida; capite, prothoracis lateribus late, elytrorum maculis quinque pedibusque flavis. Long. 3·25 millim.

Mas prothoracis margine frontali lineaque mediana postice abbreviata flavis, metasterno medio haud profunde impresso.

Femina prothorace lateribus tantum late flavis, macula elytrali humerali deficiente.

Hab. MEXICO [1 2]; PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).—COLOMBIA [3].

This insect exactly resembles certain varieties of *Brachyacantha decempustulata*, so much so that but for the absence of the spine of the front tibiæ I cannot distinguish the females. The males have no fossa on the abdomen, and the shoulder-spot of the elytra is a little more prolonged down the margin, so as sometimes to unite with the middle marginal spot.

I am unable to determine with certainty whether this species is the *C. jocosa* of Mulsant's description or not, for the following reasons:—It appears that there are several species so closely allied that the females are hardly separable. We have not received a specimen of the species here described from Mexico, nor have we seen the type of *H. jocosa* from Chevrolat's collection. A single specimen labelled "St. Paul" is in Crotch's collection, and this appears to belong to the same species as ours, excepting that it has a nearly black head.

I do not think that *H. bis-quatuorpustulata* differs specifically from it. The type is now before me; it agrees with our female specimens in all respects, except the most trivial form of the apical spot.

To identify these most closely allied species from female types alone, from such distant places, seems hardly possible.

3. **Hyperaspis levrati.**

Cleothera levrati, Muls. Spec. Col. Trim. sécur. p. 613 [1].

Hyperaspis levrati, Crotch, Rev. Coccin. p. 221 [2].

Hab. MEXICO [1 2].

This belongs to a little group of species which have five yellow spots on each elytron —two on the base, two in the middle transversely, and one apical. These species are so exceedingly like *Brachyacanthæ*, such as *B. decempustulata*, that they can only be known by the structure of the front tibiæ and of the abdomen in the male. I am unable to identify an insect taken by Mr. Champion on the Volcan de Chiriqui with *H. levrati*, because the female of it has only four elytral spots, the shoulder-spot being absent; while *H. levrati*, female, the only sex known to Mulsant from Mexico, is described as having five spots. The solitary example representing *H. levrati* in Crotch's collection is a male; but it is from Brazil, and is apparently from Reiche's collection. Mulsant did indeed describe an insect from Brazil as the male of *Cleothera levrati* [Opusc. Ent. p. 89 (1853)]; but how he identified it with the Mexican female I do not know.

The Chiriqui insect is nearer still to *H. gacognii*, Muls., another Brazilian insect, according to Crotch's typical example; but I hesitate to refer it to that species without seeing female examples.

4. **Hyperaspis distinguenda.**

Cleothera distinguenda, Muls. Spec. Col. Trim. sécur. p. 622 [1].
Hyperaspis distinguenda, Crotch, Rev. Coccin. p. 221 [2].

Hab. Panama, David, Caldera, Volcan de Chiriqui, Tolé (*Champion*).—Colombia [1 2]; Brazil [2].

Rather easily known by the thorax having two yellow spots near the middle of the base, or being yellow with a hamate black marking, and by the apical elytral spot being lunate.

5. **Hyperaspis chiriquensis.** (Tab. X. fig. 25, ♂.)

Ovata, nigra; capite prothoraceque albido-flavis, hoc maculis duabus magnis triangularibus basi conjunctis, margine antico haud attingentibus, punctoque laterali his annecto nigris; elytris singulis maculis sex, pedibusque flavis. Long. $2\frac{3}{4}$–3 millim.
Mas capite toto flavo.
Femina capite nigro, puncto occipitali flavo.

Hab. Panama, Volcan de Chiriqui 8000 feet (*Champion*).

In this species the thorax has the sides widely yellow, and the central black vitta divided nearly to the base by a wedge-shaped line; while the two lateral dots are just united with the central black portion. The elytra have each six yellow marks—one near the scutellum, one on the shoulder, rather linear, a pair transversely placed, almost united and transverse themselves, in the middle, and a pair near the apex, often united. In the female the central thoracic line is not wider in front, where, indeed, it scarcely divides the black portion; the head is black, with a yellow spot, and the whole insect is more suffused.

A male example is figured.

6. **Hyperaspis coronata.** (Tab. X. fig. 26.)

Ovata, nigra; capite, prothoracis lateribus, margine antico et macula basali coronam simulante, elytrorumque humero, maculis quatuor apiceque, flavis; pedibus rufis. Long. 3 millim.

Mas capite toto flavo.

Femina capite nigro, puncto flavo coroniformi.

Hab. PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

Punctuation very thick. Head yellow in the male, black in the female, with a spot on the crown similar to that on the thorax, *i. e.* with a projecting point in the middle and narrowed at its base. Thorax with the sides widely yellow; the lateral spot hardly indicated by a faint stain; the front margin very narrowly yellow; a crown-like spot on the middle at the base. Elytra with the shoulder and a pair of spots placed a little before the middle, the marginal one of which is joined with the shoulder-stripe, yellow; there is also a pair of subapical spots, joined together, and also with the yellow apex along the margin; these spots are sometimes suffused, so as to form a heart-shaped yellow apical patch enclosing an angular black marking.

7. **Hyperaspis billoti.**

Cleothera billoti, Muls. Spec. Col. Trim. sécur. p. 619 [1].

Hyperaspis billoti, Crotch, Rev. Coccin. p. 221 [2].

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*), Frontera in Tabasco (*Höge*); GUATEMALA, Chiacam, Teleman, Mirandilla, Pantaleon, El Reposo, Zapote (*Champion*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Volcan de Irazu (*Rogers*).—SOUTH AMERICA, Brazil [1] [2].

This insect so closely resembles *Brachyacantha decempustulata* that it is difficult to separate the two species unless the generic characters are observed; nevertheless, most specimens of *H. billoti* are very much smaller than any of the allied forms. The males have the shoulder-spot clearly defined, and it seems to be present sometimes in the female, though obscure and very much reduced in size, being, in fact, a mere point.

A very large, and on the whole uniform, series of specimens were taken by Mr. H. H. Smith at Teapa; some of these scarcely exceed one millimetre in length.

ii. *Elytra black, with four yellow spots.*

8. **Hyperaspis undulata.**

Coccinella undulata, Say, Journ. Acad. Phil. iv. p. 92 (1824) [1].

Hyperaspis undulata, Crotch, Trans. Am. Ent. Soc. iv. p. 381 [2].

Var. *Exochomus 4-oculatus,* Motsch. Bull. Mosc. 1845, 2, p. 383 [3].

Hyperaspis quadri-oculata, Crotch, Rev. Coccin. p. 231 [4]; Trans. Am. Ent. Soc. iv. p. 381 [5].

Hab. NORTH AMERICA [1], California [3 4 5].—MEXICO, Northern Sonora (*Morrison*).

This insect does not accord with *H. elegans*, Muls. (which is sunk by Crotch as syno-

nymous with *H. undulata*), if a specimen in the Sallé collection is correctly so named, and which certainly agrees with Mulsant's description. Neither species is represented in Crotch's collection, and it is certainly better to keep them distinct. The present species, of which we have received a series from Morrison under the name *H. undulata*, agrees with Crotch's description, and no doubt occurs in the adjoining State of California. The other localities quoted by Crotch [2] may refer to *H. elegans*.

iii. *Elytra black, the humerus and two spots yellow.*

9. **Hyperaspis lateralis.** (Tab. X. fig. 24, ♂.)

Hyperaspis lateralis, Muls. Spec. Col. Trim. sécur. p. 657 [1]; Crotch, Rev. Coccin. p. 235 [2].

Hab. Mexico [1 2], Guanajuato (*Sallé*).

The male has the head, and the front margin and sides of the thorax, narrowly yellow. The elytral markings are blood-red, and they do not differ in the two specimens now before me. The head and thorax in the female example are entirely black.

We figure a male from Sallé's collection.

iv. *Elytra black, with a median and a subapical fascia, more or less united, yellow.*

10. **Hyperaspis lunulata.**

Hyperaspis lunulata, Muls. Spec. Col. Trim. sécur. p. 680 [1]; Crotch, Rev. Coccin. p. 235 [2].

Hab. Mexico [1 2].

I have not seen an authenticated example of this species; it is not represented in Crotch's collection. The male, as in so many of the species described by Mulsant, was unknown to him. Two specimens from Guanajuato in Sallé's collection (♂ and ♀), so named, are clearly referable to *H. connectens*. It is possible that the name *H. lunulata* may be a synonym of *H. connectens*.

11. **Hyperaspis connectens.**

Coccinella connectens, Schönh. Syn. Ins. ii. p. 157, nota [1].

Hyperaspis connectens, Muls. Spec. Col. Trim. sécur. p. 662 [2]; Crotch, Rev. Coccin. p. 230 [3].

Hab. Mexico [3] (*Sallé*), Jalapa (*Höge*), Orizaba (*H. H. Smith*), Guanajuato (*Sallé*); Guatemala, near the city (*Champion*); Nicaragua, Chontales (*Janson*).—Antilles [3], St. Eustatius [1 2], St. Bartholomew [2].

12. **Hyperaspis cincticollis.** (Tab. X. fig. 23.)

Cleothera cincticollis, Muls. Spec. Col. Trim. sécur. p. 553 [1].

Hyperaspis cincticollis, Crotch, Rev. Coccin. p. 230 [2].

Hab. Panama, San Miguel in the Pearl Islands (*Champion*).—Colombia [1 2].

Crotch remarks that this may be merely a variety of *H. festiva*. Mr. Champion met

with it abundantly; and in the series collected by him, amongst which there is a good deal of variation, the red spots (which are distinct in *H. festiva*) are usually united both laterally and along the suture, forming a squarish ring on each elytron.

13. **Hyperaspis festiva.**

Hyperaspis festiva, Muls. Spec. Col. Trim. sécur. p. 659 [1]; Crotch, Rev. Coccin. p. 230 [2].

Hab. North America, California [2].—Mexico, Tierra Colorada in Guerrero (*H. H. Smith*); British Honduras (*Sallé*); Panama, Bugaba, Volcan de Chiriqui, David, Peña Blanca (*Champion*).—Colombia [1 2]; Amazons, Santarem [2]; Brazil [1 2], Minas Geraes [2]; Bolivia [2].

Variable, but usually to be distinguished by the uncinate apical spot, which is reflexed towards the suture as if to join the discoidal central spot. Crotch also [2] quotes "Chili;" but the specimens so labelled in his collection belong to a different species.

14. **Hyperaspis compedita.**

Cleothera compedita, Muls. Spec. Col. Trim. sécur. p. 631 [1].

Hyperaspis compedita, Crotch, Rev. Coccin. p. 230 [2].

Hab. Mexico [1 2].

Not in Crotch's collection, and not known to me.

15. **Hyperaspis bicruciata?** (Tab. XI. fig. 3, ♀.)

Hyperaspis bicruciata, Muls. Spec. Col. Trim. sécur. p. 664 [1]; Crotch, Rev. Coccin. p. 230 [2].

Hab. Panama, Volcan de Chiriqui 4000 feet (*Champion*).—Colombia [1 2].

A single example of a *Hyperaspis* collected by Mr. Champion on the Volcan de Chiriqui may possibly be identical specifically with *H. bicruciata*, the type of which is now before me. It differs mainly in the coloration of the thorax, which in the type of *H. bicruciata* (a male) is yellow, with the middle and base rather narrowly infuscate, the head being yellow. In our example (a female) the head and middle of the thorax are black. There is, however, nothing in this inconsistent with the supposition that they represent one species.

v. *Elytra with three yellow spots.*

16. **Hyperaspis sexverrucata.** (Tab. XI. fig. 4.)

Coccinella 6-verrucata, Fabr. Syst. Eleuth. i. p. 383 (1801) [1].

Cleothera sexverrucata, Muls. Spec. Col. Trim. sécur. p. 639 [2].

Hyperaspis sex-verrucata, Crotch, Rev. Coccin. p. 222 [3].

Hab. Mexico [2 3], Northern Sonora (*Morrison*), Chilpancingo in Guerrero 4600 feet, Teapa in Tabasco (*H. H. Smith*); Guatemala, Capetillo, Zapote, Cahabon (*Champion*); Nicaragua, Chontales (*Janson*); Panama, Volcan de Chiriqui (*Champion*).—South America [1 2].

Crotch appears to have known this species, but it is not represented in the Cambridge collection. There are, however, in our collection several specimens which agree very well with the description, and which I accordingly refer to it, besides some others sent by Morrison. Fabricius [1] gives as locality "America meridionalis," and our insect has certainly a wide range in Central America. The specimens from Sonora differ from the others in having the lateral spot on the elytra elongate, reaching almost to the apical one. *H. sexverrucata* is not included by Crotch among the Hyperaspides of the United States.

We figure a specimen from Chilpancingo.

17. **Hyperaspis kunzii.** (Tab. XI. fig. 5, ♂.)

Hyperaspis kunzii, Muls. Spec. Col. Trim. sécur. p. 672 [1]; Crotch, Rev. Coccin. p. 237 [2].

Hab. Mexico, Guanajuato (*Sallé*).

The locality for this species was unknown to Mulsant [1] and Crotch [2]. There are two examples of it from Mexico in the Sallé collection.

vi. *Elytra with two yellow spots.*

18. **Hyperaspis deyrollii.**

Hyperaspis deyrollii, Crotch, Rev. Coccin. p. 229 [1].

Hab. Mexico [1], Teapa; British Honduras, R. Hondo (*Blancaneaux*).—Amazons, Santarem; Brazil, St. Paulo [1].

"♂. Subovate, slightly convex, rather closely and visibly punctate, black with pale yellow markings; head yellow; thorax with the sides (very broadly) and front yellow, the lateral patch angulated on its inner edge; elytra each with two moderately large pale yellow spots—one discoidal, subtransverse, at the middle, one subapical, free, nearer the external margin. L. 1–1½ lin. (2–3 millim.).—♀. Head and front of thorax black."

A single example from British Honduras in our possession agrees entirely with Crotch's type, which is from Reiche's collection. There is a second example in Crotch's collection, from Santarem on the Upper Amazon.

vii. *Elytra with one yellow spot.*

19. **Hyperaspis centralis.** (Tab. XI. fig. 6.)

Hyperaspis centralis, Muls. Spec. Col. Trim. sécur. p. 685 [1]; Crotch, Rev. Coccin. p. 229 [2].

Hab. Mexico [1 2], Toxpam (*Sallé*), Cuernavaca in Morelos, Jalapa, Cordova, Oaxaca, Tapachula in Chiapas (*Höge*); British Honduras, Belize (*Blancaneaux*); Guatemala, Guatemala city (*Salvin, Champion*), El Reposo, Zapote, Calderas, Chiacam, Chacoj (*Champion*); Panama, Bugaba, David, Caldera, Taboga I. (*Champion*).

The single example in Crotch's collection is labelled "type," but there is no locality-ticket upon it now. This agrees with our specimens, and is a male, and as Reiche's types of this family were acquired by Crotch it is probably the true type.

The female, of which we have examples from Jalapa, Cordova, and Oaxaca, as well as one from Calderas in Guatemala, have the head black.

The various examples differ greatly in size, some being nearly three millim. long, while others from Belize, Zapote, and Chacoj are scarcely more than one millim. long; and they also vary in shape, some small specimens appearing to be shorter than others.

20. **Hyperaspis panzosæ.** (Tab. XI. fig. 7, ♀.)

Breviter ovata, convexa, nigra, crebre subtiliter punctata; elytris sanguineis, margine basali, suturali et apice late nigris. Long. 2·5 millim. ♀.

Hab. GUATEMALA, Panzos in Vera Paz (*Champion*).

The body and legs are black. The elytra have the large red patch extending to the margin, just leaving the reflexed edge black; the suture and base are rather widely, and about a quarter of the elytra at the apex, black; there is a spot on the callus, not free, but united with the black of the base.

This is an embarrassing insect to deal with, as a single female specimen only has been received. It is probable, however, that it belongs to a species distinct from any that has yet been described.

21. **Hyperaspis diversa.** (Tab. XI. fig. 8, ♂.)

Breviter ovata, valde convexa, nigra; maris capite, prothoracis lateribus late, margine antico tenuiter, elytrorum maculis duabus, una basilari sutura approximata, altera pone medium majore, magis distante, suturam et marginem æque appropinquante, flavis; pedibus ferrugineis, femoribus infuscatis. Long. 2 millim.

Hab. NICARAGUA, Chontales (*Janson*, ♂).

Femina capite prothoracisque margine antico nigris.

Hab. PANAMA, Bugaba (*Champion*).

In size and form this species resembles *H. centralis*; the punctuation, though fine, is distinct and very close. The head of the male is entirely yellow, that of the female entirely black. The thorax has the sides rather widely yellow, the inner edge being nearly straight and parallel with the margin; the front margin is narrowly yellow in the male. The anterior elytral spot is on the base near the scutellum, but the limb of the base is black and it is flattened on the basal side; the posterior spot is much larger, round, equally distant from suture and margin, and (in the male example) a little emarginate on the apical side.

We figure the male from Chontales.

viii. *Elytra black, with the margin yellow.*

22. **Hyperaspis elegans.**

ab. of undulata

Hyperaspis elegans, Muls. Spec. Col. Trim. sécur. p. 658 [1].

Hab. Mexico, Guanajuato (*Sallé*), Cuernavaca in Morelos (*Höge*).

I am unable to follow Crotch in connecting this species with *H. undulata* (Say). It is a smaller, more oval insect, with the border of the elytra neatly yellow from the humeral angle to the apex; the pale margin is sinuate on its inner side, almost terminating at the sutural angle, where it is widened just before the angle, thus representing the apical spot; and there is one discoidal spot.

H. elegans is evidently a different species to the one I have recorded here as *H. undulata*, and it agrees well with Mulsant's description [1]. The single example in the Sallé collection is a male, with the head yellow; it was named *H. elegans* in his collection. *H. elegans* has not therefore, so far as I am aware, been found in the United States.

I observe that the lateral margin of the thorax in the single male specimen of *H. elegans* before me is much narrower than in *H. undulata*, and that the front margin is not yellow.

23. **Hyperaspis fimbriolata.**

Hyperaspis fimbriolata, Melsh. Proc. Ac. Phil. iii. p. 180 [1] (1847); Crotch, Rev. Coccin. p. 233 [2]; Trans. Am. Ent. Soc. iv. p. 379 [3].

Hyperaspis rufomarginata, Muls. Spec. Col. Trim. sécur. p. 661 [4].

Hyperaspis cincta, Lec. Proc. Acad. Phil. x. p. 89 [5] (1858).

Hab. North America [2 4], Kansas [3], Lake Superior [3], Pennsylvania [1 3], California [3 5].—Mexico, Northern Sonora (*Morrison*).

This insect is very closely allied to the species here recorded as *H. elegans*, principally differing from it, in the males, in the absence of a discoidal spot, and in the yellow border of the elytra being distinctly terminated before the sutural angle. The thorax in the male of *H. fimbriolata* is also very narrowly yellow in front, this not being the case in the single male of *H. elegans* that I have been able to examine.

24. **Hyperaspis calderana.** (Tab. XI. fig. 9.)

Ovato-subquadrata, aurantiaca; corpore subtus elytrorumque disco nigris, prothoracis disco interdum infumato, abdominis apice pedibusque rufis. Long. 3 millim.

Mas? prothorace dilutiore, scutello flavo.

Hab. Panama, Caldera in Chiriqui (*Champion*).

The head is yellow. The thorax is of the same colour (a rich orange-yellow), with the exception that in some specimens the base in the middle and the outline of a roughly-shaped **M**-like mark are indicated, and in these the scutellum is also dark. The disc of the elytra is black, with a ramus extending to the callus, and a second

projection on each side about one-third from the apex, the black being also prolonged down the suture almost to the apex; thus there is an irregular but wide orange margin. The punctuation is exceedingly fine.

This species somewhat resembles *H. fimbriolata*, but it is broader. Six specimens were obtained.

25. **Hyperaspis guatemalensis.** (Tab. XI. fig. 10.)

Breviter ovata, convexa, nigra; capite, prothoracis lateribus late, elytrorumque marginibus sinuatim aurantiaco-flavis; abdominis apice pedibusque flavis. Long. 3 millim.

Hab. GUATEMALA, Capetillo, Zapote (*Champion*).

A little larger and more convex than *H. calderana*, and with the punctuation more distinct than in that species. The thorax has the centre black, narrowing in front, and the front margin very narrowly yellow, the black disc being less indented by the yellow margin along the sides. In one example from Capetillo there is, in addition, a lunulate yellow spot on the base just joined with the margin. In a second example from the same locality there is a minute yellow dot near the scutellum, while the single specimen from Zapote has the base of the elytra wholly black. Judging from the exposed pygidium, the Zapote specimen is a female; it has the abdomen in great part bright yellow.

H. guatemalensis is very nearly allied to *H. calderana*, but will, I think, prove to be distinct.

ix. *Elytra black, with the apex white.*

26. **Hyperaspis panamensis.** (Tab. XI. fig. 11.)

Suborbicularis, convexa, nigra; capite, prothoracis margine antico anguste, lateribus late, elytrorumque apicibus oblique, albidis; abdomine pedibusque flavis. Long. 3·5 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2500 to 4000 feet, Boquete, Caldera, David (*Champion*).

This species is very closely allied to the Brazilian *H. albopunctata*, of which I have the type before me. It is strongly punctured like that species, but among a considerable series collected by Mr. Champion none have the white dot on the centre of the elytra. The head is yellow, nearly white.

x. *Thorax yellow, with black markings.*

27. **Hyperaspis noticollis?** (Tab. XI. fig. 12.)

Cleothera noticollis, Muls. Spec. Col. Trim. sécur. p. 588 [1].
Hyperaspis laticollis, Crotch, Rev. Coccin. p. 219 [2].

Hab. COSTA RICA, Caché (*Rogers*).—COLOMBIA [1 2]; BRAZIL, Rio Janeiro [2], Minas Geraes [2].

A single example sent by Rogers from Costa Rica is probably not distinct from the

South-American *H. noticollis*, Muls. It differs only in having the markings on the elytra reduced, so that the inner anterior spot is not curved or hamate, as may be seen by a reference to the figure. Mulsant notices variations both of the elytra and the thorax in marking.

xi. *Elytra yellow.*

28. **Hyperaspis adelaida.** (Tab. XI. fig. 13.)

Breviter ovata, valde convexa, flava, creberrime subtiliter punctata ; prothorace maculis quatuor, elytris singulis guttis sex rufo-piceis, scutello et pectore piceis. Long. 4 millim.

Hab. MEXICO, Toxpam, Playa Vicente (*Sallé*), Jalapa (*Höge*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*) ; GUATEMALA, Teleman (*Champion*).

The ground-colour above is bright yellow. The thorax is deflexed at the sides, strongly transverse, and with the base rounded, as in all the very convex species ; with four irregular and ill-defined spots—one in the middle of the disc, often partly divided, a small one before the scutellum, sometimes only indicated on the margin, and one on each side on the base. The elytra have each two spots near the suture, the anterior one of which is oblong or hamate, and the posterior one is very near to its fellow on the other elytron, and four exterior to these—three submarginal, one discoidal.

This species is somewhat like the Brazilian *H. triacantha*, Muls. A specimen from Teleman is figured.

29. **Hyperaspis albicollis.**

Orbicularis, convexa, flavo-testacea ; prothorace dilutiore, sæpe albido-testaceo fusco-notato ; subtilissime punctata, elytrorum stria suturali, e punctis fuscis haud impressis formata. Long. 3–4 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui, Caldera, David, Tolé, Taboga I., San Miguel in the Pearl Islands (*Champion*).

Very variable in size, and more uniformly coloured than *H. subsignata*. The head and thorax are usually whitish-yellow, the latter having occasionally some indistinct fuscous markings ; in specimens from Caldera these take the form of five spots—two discoidal arcuate ones with an antescutellar spot form a sort of Y, the stem of which is sometimes wanting, and in these examples there are two basal spots. The elytra have usually a series of brown punctures near the suture, and indications of similar obsolete punctures near the callus and along the margin. The anterior tibiæ are compressed, and slightly widened on the exterior side in the middle.

A great many examples were met with by Mr. Champion.

30. **Hyperaspis subsignata.**

Hyperaspis subsignata, Crotch, Rev. Coccin. p. 226 [1].

Hab. NORTH AMERICA, Texas [1].—MEXICO, Teapa in Tabasco (*Sallé*, *H. H. Smith*),

Campeachy in Yucatan [1]; Guatemala, San Juan, Chacoj, La Tinta, and Tamahu, all in Vera Paz (*Champion*).

Apparently a common insect where it occurs. A large number of examples were obtained at Teapa.

31. **Hyperaspis pauperula.**

Luteola vel albido-testacea, elytrorum macula pone medium, haud bene discreta, nigro-picea; sutura, disco et margine tenui plus minusve infuscatis. Long. 2 millim.

Hab. Guatemala, San Gerónimo (*Champion*).

Near *H. subsignata*, but smaller. The elytral spot is distinctive, but is not constant, and the thorax has the middle only very obscurely darker than the sides.

32. **Hyperaspis marmorea.**

Oblongo-ovata, albido-lutescens; prothoracis basi et disco (medio profunde diviso) nec angulos posticos nec marginem anteriorem attingente nigris; sutura (ante medium dilatata) punctoque calloso nigro-piceis. Long. 3–3·5 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

In form this species resembles those of the first section. In colour it is a little like the Brazilian *H. insignis*, Crotch. The head is quite yellow in the male; in the female it is obscure piceous, with a brownish-yellow spot. The thorax in the male has a black stripe along the base, which is produced into two horns in the middle; while the female has the disc more widely black, with a narrow division, not reaching the base. The suture is not darkened at the scutellum, but below it, and is bordered with darker brown than the rest of the elytra; in some examples it has a very obscure, transverse, subapical cloud.

Five specimens were obtained.

33. **Hyperaspis terminata.** (Tab. XI. fig. 17.)

Suborbiculata, pallide lutea; capite prothoraceque albidis, illo disco nigro; elytris aurantiacis, apice scutelloque nigris. Long. 2·5 millim.

Mas capite prothoracisque limbo antico et lateribus late albidis.

Femina capite nigro.

Hab. Guatemala, Zapote (*Champion*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

Head in the male white, in the female black, with only the mouth yellow. Thorax black, with the sides in the male white for a quarter the width, and the front margin also narrowly so, invading the front of the black in the middle, but not dividing it; in the female only a spot on the sides is white. Scutellum black or rufous. The elytra have sometimes the extreme edge at the base blackish; the callus, a line of punctures

along the suture, and one or two series near the margin are fuscous; they have the tips black for about a quarter of their length, forming a common transverse spot at the apex; the general colour is orange-yellow. The punctuation of the head and thorax is very fine, scarcely visible in the male; that of the elytra is rather stronger, but still very fine and close. The body beneath is yellow; but in the female it is often infuscate in the middle. The three specimens from Zapote, all females, are more orbicular than the type, and they have the thorax wholly black (or nearly so), while the apical spot is small; but I do not believe that they represent more than a variation of the same species.

Numerous specimens, including both sexes, were met with on the Volcan de Chiriqui, at elevations of from 2500 to 4000 feet. Amongst the few received from Bugaba, one, a female, pretty closely resembles the Zapote specimens, and has the apical spot almost obsolete.

H. terminata must, I think, resemble *Cleothera melanura*, Muls.; but I have not seen a specimen of that species, and our insect does not well agree with the description of it.

34. **Hyperaspis —— ?**

Hab. Mexico, Tacambaro in Michoacan (*Höge*).

A single specimen of a large black *Hyperaspis* with the thoracic margin widely red and a blood-red spot on each elytron behind the middle.

I cannot identify this with any species described, but the example is a female and had better remain unnamed at present.

HYPERASPIDIUS.

Hyperaspidius, Crotch, Trans. Am. Ent. Soc. iv. p. 382 (1873).

The species which forms the type of this genus is referred to the Linnæan *Chrysomela trimaculata*; it was separated from *Hyperaspis* by Crotch, on the ground that the epipleuræ of the elytra are not foveolate. Chapuis in the 'Genera des Coléoptères' does not notice the genus. Three species are referred to it by Crotch.

1. **Hyperaspidius trimaculatus.**

Chrysomela trimaculata, Linn. Syst. Nat. 12th edit. i. 2, p. 592 [1].
Hyperaspis trimaculata, Muls. Spec. Col. Trim. sécur. p. 668 [2]; Crotch, Rev. Coccin. p. 227 [3].
Hyperaspidius trimaculatus, Crotch, Trans. Am. Ent. Soc. iv. p. 382 [4].
Coccinella trilineata, Schall. Abhandl. Ges. Halle, i. p. 262 (1783) [5].
Hyperaspis vittigera, Lec. Proc. Acad. Phil. vi. p. 133 [6].

Hab. North America, Kansas [3 4], Dacota [3], Missouri [6].—Mexico [2 3], Guanajuato, Parada (*Sallé*), Chilpancingo in Guerrero (*H. H. Smith*; var. ♀).

This is a depressed, rather oblong species; the head and sides of the prothorax are yellow; the elytra have the basal and lateral margins yellow, the latter joined to a vitta, which runs parallel to the black suture, at the apex. In the specimen from Chilpancingo, which I think is a female variety of this species, the head is black, the thorax only narrowly margined at the sides, and the subsutural vitta is joined to the yellow margin at the base and is interrupted at the apex; it is also smaller than the typical examples.

Obs.—I have very carefully examined one of the specimens from Guanajuato, and also a specimen from Crotch's collection labelled "Chevr. ex Muls." Neither of these bears out Mr. Crotch's statement that the epipleuræ are "not foveolate"; in fact, the foveæ are perfectly apparent, and those for the hind knees are marked as usual by a sinuation of the margin, which can be seen without turning up the insect. Both our specimens from Guanajuato are males: the yellow vitta in one of these is joined to the margin at both ends, and in this respect is perfectly similar to Crotch's specimens; the one I have examined is a female.

Subfam. *DISCOTOMIDES.*

The Discotomides are a group of five or six genera peculiar to the New World, of a highly developed form, containing very glabrous species of great beauty, of the average size or above it, and often distinguished by having one or two joints of the antennæ coalescing so as to give them the appearance of being from eight to ten in number.

Their position is doubtful, but they certainly do not come in well where Crotch placed them, following *Lithophilus*. Chapuis places them as his third Group between the "Coccinellites" and the "Cariites."

We here place them as conveniently closing the smooth section.

They form a very natural link with the Endomychidæ through *Endomychus*, and seem worthy of a higher rank than can be given them in a linear arrangement.

SELADIA.

Selasia, Mulsant, Spec. Col. Trim. sécur. p. 216 (1850) (nomen præocc.).
Seladia, Mulsant, Monogr. Coccin. p. 154 (1866); Crotch, Rev. Coccin. p. 304; Chapuis, Gen. Col. xii. p. 187.

Seladia is a genus which of all the Coccinellidæ exhibits the greatest divergence from the normal type, and very closely recalls the Endomychidous form in some of its characters. The antennæ are robust and have the club absolutely as in some genera of that family, while the tarsi, no less by their clearly tetramerous structure, might almost cause these insects to be attributed to the same family. The colour and markings and the depressed form are suggestive of either the Endomychidæ or the

Erotylidæ. And the same remark applies to the South-American genus *Micaria*, which at present has not been found in Central America.

Mulsant has described several species, but, according to Crotch, five of these are but varieties of one. They are insects of great beauty and variety, and above the average size.

1. **Seladia nigricollis.**

Selasia nigricollis, Muls. Spec. Coll. Trim. sécur. p. 217 [1].
Seladia nigricollis, Muls. Monogr. Coccin. p. 155 [2]; Crotch, Rev. Coccin. p. 304 [3].
Var. *Seladia visceralis*, Muls. Monogr. Coccin. p. 155 [4].

Hab. Mexico [1–4], Jalapa (*Höge*), Toxpam, Cordova (*Sallé*).

A considerable series of specimens were obtained by Höge. The variety *S. visceralis* appears to differ only by having the abdomen red; none, however, of the examples sent by Höge are of this form.

2. **Seladia augustiniana.**

Seladia augustiniana, Muls. Monogr. Coccin. p. 155 [1]; Crotch, Rev. Coccin. p. 304 [2].

Hab. Mexico [1 2] (*Sallé*), Jalapa (*Höge*).

3. **Seladia beltiana.** (Tab. XI. fig. 14.)

Rufo-testacea; antennis, palpis, geniculis, tibiis tarsisque nigris; elytris albido-flavis, maculis duabus magnis, limbo laterali et sutura tenuiter (hac ad apicem in macula dilatata) nigris. Long. 7·5 millim.

Hab. Nicaragua, Chontales (*Belt*).

Head and thorax reddish ochreous, the sides of the latter whitish, a little reflexed, and subdiaphanous. The scutellum, the body, and femora are ochreous; the tibiæ, tarsi, and knees are black. The elytra are of a very pale yellow, each with the extreme edge and suture black; the sutural marking expands suddenly at the apex, forming a pear-shaped spot, and on each elytron is a large black spot near the base, equally distant from the base and margin and suture, and of which the apical side is nearly straight; and another somewhat transverse spot near the apex, of which the inner edge is straight, thus leaving a distinct yellow cross on the elytra taken together. The whole upper surface is very smooth and shining, nor are distinct punctures visible anywhere. The abdomen is rather paler, especially towards the apex, than the rest of the body. This species is allied to *S. augustiniana*, but the colour of the body is different.

Two specimens obtained by the late Mr. Belt, one of which we figure, are all I have seen.

4. **Seladia alboguttata.** (Tab. XI. figg. 15; 16, var.)

Sanguineo-rufa; antennis, palpis, tibiis, tarsis, prothoracis maculis duabus in margine antico, et duabus alteris basalibus, his sæpe conjunctis, nigris; elytris nigris, singulis maculis duabus basalibus, tribus fasciam medianam prebentibus, et una subapicali obliqua, albis. Long. 5–7 millim.

Var. α. Elytrorum maculis rubidis.

Var. β. Elytris albis nigro-limbatis, maculis duabus magnis sæpe conjunctis apiceque nigris. (Fig. 16.)

Hab. GUATEMALA, Capetillo (*Champion*).

Rather smaller on the average than any of the preceding species; the head and thorax of a beautiful blood-red colour, the latter with a black central marking, which is very variable, consisting of either two spots on the front margin, and two large ones usually united on the base, or these may all be united forming a broad central vitta with a central linear red spot, and even with the hind angles black. The elytra are black and shining, with two white spots on the base, but not quite touching it nor the suture (the external limb of the elytra being always black), one subscutellar and the other subhumeral; three spots form a slightly arcuate fascia about the middle, and there is an oblique spot (formed of two united, occasionally divided) near the apex. The whole body beneath, with the legs up to the knees, is of a clear blood-red colour. The antennæ are black, with the first three or four joints reddish beneath; the palpi are pitchy, paler at their bases; the tibiæ and tarsi are black.

The variety α is similarly coloured, but the spots on the elytra have become brownish-red, but I think only from discoloration since death.

The variety β results from the more or less complete fusion of the white spots on the elytra. Only two specimens of this variety were obtained, and they differ slightly in the degree to which the white colour has extended: in one of them the anterior large black spots unite at the suture, but are separated from the margin; while in the other they are just interrupted at the suture, but are united with the posterior black spots by two narrow lines, indicating the position of the middle white spot of the fascia in the type.

Numerous specimens of this beautiful species were taken at Capetillo by Mr. Champion, including the two of the variety β above described; they were all found æstivating under bark, on the slope of the Volcan de Fuego.

We figure a specimen of the type, fig. 15, and one of the variety β, fig. 16.

Subfam. *PORIIDES.*

With the Poriides we commence the section of the Coccinellidæ which have the entire surface more or less pubescent. While the classification of the family by this character presents considerable difficulty, there is nevertheless a true affinity between many of the hairy genera and their subdivision into subfamilies, and their relative position both with regard to each other and to the foregoing divisions is to be regarded as, at present, an unresolved problem. Crotch placed *Poria* at the head of his Rhizobiides, but the genus diverges in its eyes not being coarsely facetted, and I prefer to regard them, with Mulsant and Chapuis, as forming a separate group peculiar to America.

PORIA.

Poria, Mulsant, Spec. Col. Trim. sécur. p. 885 (1850); Crotch, Rev. Coccin. p. 288; Chapuis, Gen. Col. xii. p. 204.

Poria is an assemblage of species of two types of colour—blue or green or blackish insects; and red species agreeing in having an irregular stellate punctuation, and long rather well-developed antennæ. They would appear to be more numerous in South America than in our region.

1. **Poria sallæi.** (Tab. XI. fig. 18.)

Poria sallei, Crotch, Rev. Coccin. p. 289 [1].

Nigra, supra cyanea; ore, epistomate, antennis, palpis, pedibus abdomineque saturate rufis; supra breviter, densius griseo-pubescens; capitis vertice cyaneo, prothoracis margine antico et laterali tenuiter rufis; elytris fortiter, irregulariter, subconfluenter punctatis. Long. 7–9 millim.

Hab. Mexico [1], Juquila (*Sallé*), Cordova (*Höge*); Guatemala (*Sallé*), Coban, Panima, Purula, and Cubilguitz in Vera Paz, Dueñas, Zapote (*Champion*).

An example from Purula is figured. This insect very closely resembles *P. cyanea*, a Brazilian species; indeed it scarcely differs from it except in having the metasternum black.

The examples (two in number) from Zapote are rather more greenish in tint than the others. Mr. Champion collected a large number at Purula.

2. **Poria chiriquensis.** (Tab. XI. fig. 19.)

Poriæ sallæi similis et valde affinis, prothoracis lateribus late rufis modo differt.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Three examples of this insect were obtained in Chiriqui by Mr. Champion, and it seems as much entitled to rank as a species as *P. sallæi*. The thorax has a black vitta in the middle, of about equal width with the yellow sides. All the species of *Poria* are very closely allied in form, punctuation, and general details. The size of the three examples is that of full-sized *P. sallæi*.

3. **Poria cuprea.** (Tab. XI. fig. 20.)

Statura et forma *P. sallæi* similis et iterum affinis, supra cuprea pube brevi aurea dense vestita; subtus (abdomine rufo) nigra; capite antice, ore, antennis, palpis, prothoracis marginibus tenuiter pedibusque rufis. Long. 8–9 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

In form and punctuation, and by the black breast and black epipleuræ, *P. cuprea* is more closely allied to *P. sallæi* than to *P. cyanea*. It is rather smaller on the average than those species, and of a brilliant brassy copper colour above. The pubescence on the head and thorax is especially dense, and is golden yellow

instead of grey; in fresh examples it is equally dense on the elytra, but usually appears to be worn off. A series of about twenty examples was obtained by Mr. Champion, some below, but the greater part above, 4000 feet.

4. **Poria rubicunda.**

Oblongo-ovata, rufa, pube brevi grisea tenuiter vestita; elytris fortiter crebre irregulariter punctatis. Long. 7–9 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 feet, Bugaba (*Champion*).

Entirely deep rusty-red, sometimes the thorax has an indistinct cloudy marking near its centre, and in a few examples the middle of the metasternum is dark. The head and thorax are hardly visibly punctate, but the elytra are almost rugose, the larger punctures being numerous and confluent. *P. rubicunda* is very nearly allied to *P. batesi*, a Brazilian species described by Crotch, the type of which is now before me; but the punctuation of the elytra is coarser, and other small differences in colour incline me to think it is probably distinct. There is, however, no other specimen of *P. batesi* than the type in Crotch's collection, and it is not in very good preservation.

A series of examples was collected at Bugaba, but only a single specimen from the Volcan de Chiriqui.

5. **Poria sanguinitarsis.**

Poria sanguinitarsis, Muls. Spec. Col. Trim. sécur. p. 885 [1]; Crotch, Rev. Coccin. p. 289 [2].

Hab. NICARAGUA, Chontales (*Belt*).—SOUTH AMERICA, Colombia [2], Brazil [1 2].

A single example, received from the late Mr. Belt.

6. **Poria marginithorax.**

Prodilis marginithorax, Crotch, Rev. Coccin. p. 276 [1].

Hab. MEXICO [1] (*Sallé, ex coll. Sturm*), Orizaba (*Sallé*), Amula and Chilpancingo in Guerrero (*H. H. Smith*), Jalapa (*Höge*).

Crotch, in describing this insect, associated it with *Prodilis pallidifrons*, a South-American species. I have examined the type of the latter, and find that *P. marginithorax* differs in many essential particulars from it. The punctuation of *P. pallidifrons* is uniform, though deep and sparse, and the thorax in our insect is not margined. It, in fact, agrees with the smaller species of *Poria*, which have shorter antennæ than the typical forms. The punctuation of *P. marginithorax* is strong and close; the larger punctures are stellate, often confluent, and the whole surface is crowded with the smaller punctures. Two specimens obtained by Sallé at Orizaba have an irregular, ring-like marking common to the two elytra, and have also the head red, and the thorax red with only a dark mark on the base. These may probably represent the male.

7. **Poria sanguinolenta.**

Sanguinea ; capite, prothoracis disco elytrisque nigris, his subænescentibus. Long. 6 millim.

Hab. PANAMA, Bugaba (*Champion*).

Head black, with a faint greenish tinge ; antennæ rather short for this genus, clear coral- or blood-red ; front of the head, palpi, and the bay of the eye (the cut out portion) red. Thorax with the base not very deeply sinuate, scarcely punctured, the sides blood-red for nearly one third of the width. Elytra rather obsoletely punctate ; in the specimen before me, which appears to be worn, very little pubescence is to be seen and only at the sides and apex, where it is very short and of a grey colour. The legs and body are clear blood-red.

This is not very like any species of *Poria* that I have seen. There is unfortunately only a single specimen.

8. **Poria detrita.** (Tab. XI. fig. 21.)

Nigra, subcærulescens ; capitis fronte, antennis, palpis, pedibus anticis et posticis (basi excepta), intermediis femoribus prætermissis, abdomineque fulvis ; supra griseo-pubescens, prothoracis disco elytrisque singulis macula magna quasi denudata nigro pubescente. Long. 5 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Above blue-black ; thorax very finely punctate and shining, the head a little more distinctly so ; the labrum, and in the male the front of the head also, yellow, the base bluish-black ; antennæ not reaching the hind angles of the thorax, the three terminal joints forming about a third of the length, serrate within. Thorax short, as wide at the base as the elytra, but narrower in front, the base margined by a very fine line, the width more than twice the length ; elytra nearly hemispherical, but gibbous, the black shining patches very distinct and clothed with black pubescence, the rest of the elytra and thorax densely pubescent and hoary. Abdomen and legs yellow, the coxæ and bases of the femora of the front and hind legs, and the middle pair as far as the knees, black. In the male the sixth segment of the abdomen is visible and is notched.

Poria detrita bears a very deceptive resemblance to a large *Azya*, as well as to *Ladoria*. The puncturing of the elytra—which is (as in other *Poriæ*) "unequal," *i. e.* consisting of larger and smaller confluent punctures,—the longer antennæ, with a lax and serrate club, and the simple tibiæ (not grooved externally except for a short distance at their bases) must be examined in order to separate it from insects of the allied genera.

Three examples.

EUPALEA.

Eupalea, Mulsant, Spec. Col. Trim. sécur. p. 889 (1850) ; Crotch, Rev. Coccin. p. 290 ; Chapuis, Gen. Col. xii. p. 204.

Authors seem to have overlooked the very close affinity which there is between

Eupalea and *Oryssomus*. I regard the genus here as much more nearly allied to the latter than to *Poria*.

Nine species of *Eupalea* have been described; of these two or three are allied rather nearly to *E. picta*, the only species that has yet occurred in Central America; the rest by their markings resemble certain *Psylloboræ*, which have a reticulate pattern; all are peculiar to North or South America. Recently Mr. Blackburn has rather doubtfully referred an Australian insect to the genus; but it is probable that the position cannot be maintained. The claws in *Eupalea* are very distinctly bifid, and the thorax is margined at the base by a fine line. The antennæ are rather long and have a laxly formed three-jointed club.

1. **Eupalea picta.** (Tab. XI. fig. 22.)

Coccinella (*Epilachna*) *pictà*, Guérin, Iconogr. du Règn. Anim., Ins. p. 319 [1].
Eupalea picta, Muls. Spec. Col. Trim. sécur. p. 890 [2]; Crotch, Rev. Coccin. p. 291 [3].

Hab. MEXICO [1 2 3], Jalapa (*Höge*, *Flohr*).

Var. elytrorum maculis parum distinctis.

Hab. GUATEMALA, San Gerónimo (*Champion*).

A single specimen captured at San Gerónimo by Mr. Champion is almost unicolorous, but this is probably only due to immaturity. The insect seems to be pretty common at Jalapa, an example from which locality is figured.

ORYSSOMUS.

Oryssomus (Reiche), Mulsant, Spec. Col. Trim. sécur. p. 939 (1850); Crotch, Rev. Coccin. p. 292; Chapuis, Gen. Col. xii. p. 218.

Oryssomus was proposed by Reiche for the species which occurs in our region as well as in South America, where it was first detected. The thorax completely covers the head and is translucent in front. The head has the eyes coarsely facetted, not cut out as in *Eupalea*; the antennæ are short, their basal joint large and hatchet-shaped, the last four or five forming a large connate hatchet-club.

The genus thus differs in many important aspects from *Eupalea*, but nevertheless by the form of the thorax, and by the depressed oblong body and elytra, is clearly allied to it and was properly placed immediately following it by Crotch. Six species were added by him, five of which are Chilian and one Brazilian.

1. **Oryssomus subterminatus.** (Tab. XI. figg. 23; 23 *a*, antenna.)

Oryssomus subterminatus (Reiche), Muls. Spec. Col. Trim. sécur. p. 939 [1]; Crotch, Rev. Coccin. p. 292 [2]; Chapuis, Gen. Col., Atlas, t. 134. fig. 3 [3].

Hab. BRITISH HONDURAS, Belize (*Blancaneaux*); GUATEMALA, San Juan, La Tinta,

and Teleman in Vera Paz, Zapote (*Champion*); Panama, Bugaba (*Champion*).—South America, Colombia [1], Venezuela [2].

This remarkable species has evidently a very extensive range; Reiche's specimens, from which Mulsant described the species, are now in the Cambridge collection, and one of these is labelled "Cuma . .," the remainder of the word having apparently been cut off—Cumana being no doubt the locality, many of Reiche's insects having come from there.

The example figured is from Bugaba.

Subfam. *EXOPLECTRIDES.*

The Exoplectrides combine many of the characters of the foregoing subfamilies; and much uncertainty attends the various attempts which have been made to bring the genera composing this section into anything like a systematic arrangement.

Crotch placed under this subfamily three "groups," the Ortaliæ, Azyæ, and Exoplectræ proper; but Chapuis, on the other hand, places *Azya* and *Exoplectra*, with *Cryptogonus* and *Bucolus*, under his Bucolites, making another subfamily, Chnoodites, to include *Chnoodes* (which is, in fact, scarcely distinct from *Exoplectra*), and Ortaliites, for *Ortalia* and five allied genera. Without expressing any view on the genera from the East Indian and Australian regions, such as *Bucolus* and *Cryptogonus*, we here unite the genera occurring in Central America belonging to these different divisions under the Exoplectrides. Chapuis says of the 'Chnoodites' and of the 'Bucolites,' that they are but in fact pubescent Hyperaspides. I consider the Exoplectrides, as we here adopt the term, quite as nearly allied to the Chilocorides, of which, indeed, *Exoplectra* has very much the form, and the elytra are very similarly constructed with deeply inclined epipleuræ.

AZYA.

Azya, Mulsant, Spec. Col. Trim. sécur. p. 928 (1850); Crotch, Rev. Coccin. p. 279; Chapuis, Gen. Col. xii. p. 240.

Five species of *Azya* have been described, all from Central or South America, with the exception that one is from Guadeloupe. They are blue or blackish-blue insects, clothed with a fine pubescence, which is often denuded on a patch on the elytra.

1. **Azya luteipes.** (Tab. XI. fig. 24.)

Azya luteipes, Muls. Spec. Col. Trim. sécur. p. 928 [1]; Crotch, Rev. Coccin. p. 279 [2].
Azya scutata, Muls. Spec. Col. Trim. sécur. p. 929 [3]; Crotch, Rev. Coccin. p. 279 [4].
Azya orbigera, Muls. Spec. Col. Trim. sécur. p. 930 [5]; Crotch, Rev. Coccin. p. 279 [6].

Hab. Mexico [1–6], Puebla, Toxpam, Orizaba, Tuxtla (*Sallé*), Acapulco, Jalapa, Cordova, Cuernavaca, Tapachula in Chiapas (*Höge*), Atoyac in Vera Cruz, Chilpancingo in

Guerrero, Teapa in Tabasco (*H. H. Smith*); British Honduras, Rio Hondo and Rio Sarstoon (*Blancaneaux*); Guatemala, near the city, Capetillo, Dueñas, Zapote, San Gerónimo, Chacoj, Panzos (*Champion*); Honduras (*Sallé*); Nicaragua, Chontales (*Janson*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Volcan de Chiriqui, Caldera, San Feliz (*Champion*).—Colombia [1 2 5 6], Bogota [6]; Venezuela, Caracas [6]; Guiana, Cayenne [1 2]; Brazil [1 2], Rio Janeiro [4]; Amazons, Pará [4], Ega [4], Santarem [4].

An examination of the types shows that the three names quoted above belong to one species. The greater or less distinctness of the black patch on each elytron depends very much on the freshness of the specimens. The tibiæ, especially the front pair, have a dilatation at the apex, besides that near the middle, and so the front pair appear to have two tooth-like expansions; by this character they may easily be distinguished from *Exoplectræ*, as well as by the very fine and close punctuation, and by the fine marginal line on the base of the thorax in front of the scutellum.

A large number of *Azya luteipes* have been received by us; it occurred especially abundantly at Capetillo. *A. luteipes* is very variable in size.

2. **Azya pontbrianti.**

Azya pontbrianti, Muls. Spec. Col. Trim. sécur. p. 929 [1]; Crotch, Rev. Coccin. p. 279 [2].

Hab. Mexico, Acapulco in Guerrero (*Höge*).—South America, Cayenne [1 2], Monte Video [2], Chili [2].

This species only differs from *A. luteipes* in having the breast red, and I do not think it can be regarded as more than a colour-variety, especially as the specimens referred to it by Crotch from Chili and Monte Video fail in this respect, the one from Chili having the sterna piceous, and that from Monte Video being absolutely as in *A. luteipes*. There is, however, among specimens of the latter collected by Höge at Acapulco, an example with the breast entirely red, and it would be well to examine more specimens of this kind before sinking the name as a synonym.

LADORIA.

Ladoria, Mulsant, Spec. Col. Trim. sécur. p. 928 (1850); Crotch, Rev. Coccin. p. 280; Chapuis, Gen. Col. xii. p. 222.

The *Ladoriæ* are very like the species of *Azya*, but have the tibiæ not widened into a tooth-like expansion; they are, however, compressed externally, with the edge flattened, the ciliated margins forming a sort of groove for the reception of the tarsi when folded back. The eyes are not cut out opposite the insertion of the antennæ. The base of the thorax is not margined. The epipleuræ of the elytra have a small rather obsolete fovea for the hind tibiæ. The claws are bifid.

Ladoria is very close to *Chnoodes*; indeed I can hardly think it distinct, the differences relied on being very small and of rather specific than generic value.

Crotch added two species from South America to the one described by Mulsant.

1. **Ladoria desarmata.**

Ladoria desarmata, Muls. Spec. Col. Trim. sécur. p. 928 [1]; Crotch, Rev. Coccin. p. 280 [2].

Hab. Mexico, Toxpam (*Sallé*); Panama, Bugaba (*Champion*).—Brazil [1 2]; Amazons, S. Paulo [2].

Ladoria desarmata, apart from the generic character, very much resembles *Azya luteipes*; but is usually of a more obscure tint, and the denuded patch on the elytra is common to both on the middle of the suture. The type is in the Cambridge collection, and the examples I refer to this species agree with it. Crotch [2] quotes other South-American localities, but the examples in his collection on which these were founded must be referred to other species.

2. **Ladoria delphinæ.** (Tab. XI. fig. 25.)

Orbicularis fere hemisphæricus, dense tenuiter griseo-pubescens, fulva; prothoracis disco elytrisque obscure cyaneis, his anguste rufo-marginatis juxta suturam quasi denudatis; metasterno abdominisque basi nigricantibus. Long. 4–5 millim.

Hab. Mexico, Vera Cruz, Toxpam (*Sallé*), Acapulco, Jalapa, Oaxaca (*Höge*), Teapa in Tabasco (*H. H. Smith*).

Head, thorax, and elytra very finely and closely punctured, thickly clothed with a short grey pubescence, which reflects the light differently as the insect is viewed, so that the upper part appears more denuded of pubescence than it really is. The head and the sides and front margin of the thorax are red in all the examples that I have seen, and the elytra are very narrowly margined with the same colour; occasionally the disk of each elytron is very indeterminately reddish. The body beneath and legs are wholly red, with the exception that the middle of the metasternum is blackish, and in some examples this colour extends to the base of the abdomen. There are three examples of this species in Sallé's collection bearing the name under which I describe it; Höge sent about six, three of which were from Acapulco, and Mr. H. H. Smith obtained one at the latter locality.

Ladoria delphinæ is on the average larger than *L. desarmata*; it is clothed with a very fine but dense grey pubescence, the sutural region alone appearing black and shining.

We figure a specimen from Toxpam.

EXOPLECTRA.

Exoplectra, Chevrolat, in d'Orbigny's Dict. Univ. d'Hist. Nat. v. p. 545 (1844); Mulsant, Spec. Col. Trim. sécur. p. 916; Crotch, Rev. Coccin. p. 284; Chapuis, Gen. Col. xii. p. 241.

The *Exoplectræ* are often very like *Azyæ*, but some are of a different colour, being red all over and with spotted elytra. They have the tibiæ dentate, but the claws are bifid, and the tooth is of a different kind from that in *Azya*, being a broad, angular

dilatation near the base. The epipleuræ of the elytra have the inner margin deeply divided, as in *Chilocorus*, to which genus *Exoplectra* seems otherwise allied.

Crotch records eighteen species, all American, and it does not appear that any species occurs further north than Mexico.

1. Exoplectra tibialis.

Exoplectra tibialis, Muls. Spec. Col. Trim. sécur. p. 917 [1]; Crotch, Rev. Coccin. p. 284 [2].

Hab. Mexico [1 2], Omilteme in Guerrero 8000 feet (*H. H. Smith*).

The type, which is in Crotch's collection, now before me, appears to be a female example; it is the only exponent of *E. tibialis* which I have seen, with the exception of a single male from Omilteme, which I think should be referred to this species. The legs are dark, almost black, but inclining to be fuscous in both the type and in our example, and both are rather oblong, but in our specimen the thorax is broadly red at the sides, as seems often to be the case in the males of this genus. The head, middle of the thorax, and elytra are fuscous-black, clothed with a sparse grey pubescence.

2. Exoplectra stevensi.

Exoplectra stevensi, Muls. Spec. Col. Trim. sécur. p. 921 [1]; Crotch, Rev. Coccin. p. 285 [2].

Hab. Mexico [1 2], Acapulco and Iguala in Guerrero (*Höge*); Guatemala, Coban in Vera Paz (*Conradt*).

The males have the thorax broadly red at the sides, the legs are red in both sexes, the elytra have a brassy reflection, which is most conspicuous in the males; it is very liable to oxidize, giving rise to other metallic tints.

Four examples.

3. Exoplectra subænescens (Tab. XI. fig. 26.)

Nigra, elytris subæneis, ore, prothoracis lateribus late, abdomine pedibusque rufis. Long. 4·5–5 millim.

Hab. Mexico, Ventanas in Durango (*Höge*).

Above very like *Ladoria delphinæ*, but to be distinguished by the elytra not being margined with red (as well, of course, as by the dentate tibiæ), and the elytra have a distinctly brassy tint. *E. subænescens* is about the size of the Colombian *E. consentanea*, but has a black head, and the sides of the thorax are very much more widely red. The whole upper surface is rather densely clothed with a very short grey pubescence. The punctuation of the elytra is very close and fine, but uniform. The mouth, underside of the prothorax, and abdomen are red, the breast is pitchy-black, but shading off indeterminately, and the base of the abdomen is pitchy-red, there is, however, no greenish or brassy tint on the underside.

Seven specimens.

4. **Exoplectra cruentipes.** (Tab. XI. fig. 27.)

Nigra, nitida; ore, antennis, prothoracis angulo antico tenuiter, abdomine pedibusque sanguineo-rufis; elytris valde convexis, creberrime distincte punctatis, superne pube brevissima tenuiter vestita. Long. 5 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Very convex, nearly orbicular; head black; prothorax and elytra black, with a faint brassy tint, the former very closely and finely punctured, the latter distinctly (and compared with *E. subœnescens*) rather more sparsely punctured; the front margin of the prothorax rather more deeply emarginate than in *E. subœnescens*, and only the inner side of the front angle with a very small red linear mark which runs inside the reflexed margin of the angle itself. The underside is black, the abdomen clear red, with the exception of the first segment, which has the intercostal process and base narrowly black.

Two specimens; perhaps both are females, and the male may have the thorax with the sides more broadly red.

CHNOODES.

Chnoodes, Chevrolat, in D'Orbigny's Dict. Univ. d'Hist. Nat. iii. p. 612 (1843); Mulsant, Spec. Col. Trim. sécur. p. 908.

Dapolia (Muls.), Crotch, Rev. Coccin. p. 287.

Chnoodes is very nearly allied to *Exoplectra*.

Crotch refers six species to this genus, one of which occurs in our district, the others being South American. Eight other species he includes in *Dapolia*; but the distinction is not clear, and I treat them here as being congeneric.

1. **Chnoodes terminalis.**

Chnoodes terminalis, Muls. Spec. Col. Trim. sécur. p. 913[1]; Crotch, Rev. Coccin. p. 287[2].

Chnoodes byssina, Muls. Spec. Col. Trim. sécur. p. 913[3].

Exoplectra rubripes, Muls. Spec. Col. Trim. sécur. p. 923[4].

Hab. MEXICO[4], Tapachula in Chiapas (*Höge*); BRITISH HONDURAS, R. Sarstoon (*Blancaneaux*); GUATEMALA, San Gerónimo, San Juan, and Chiacam in Vera Paz, San Isidro, Zapote, Capetillo, Dueñas, Guatemala city (*Champion*), Aceytuno (*Salvin*); PANAMA, Volcan de Chiriqui, Taboga Island (*Champion*).—SOUTH AMERICA, Colombia[1 2 3].

2. **Chnoodes sanguinipes.**

Dapolia sanguinipes, Crotch, Rev. Coccin. p. 288[1].

"Oval, coarsely and thickly punctured, metallic green; sides of thorax broadly, legs and abdomen bright scarlet red. L. 2 lin."

Hab. MEXICO, Matamoros Izucar, Puebla, Jalapa (*Höge*), Yolotepec, Capulalpam (*Sallé*), Omilteme in Guerrero (*H. H. Smith*); GUATEMALA, Capetillo, Dueñas (*Champion*).—? SOUTH AMERICA[1].

This species is the *Chnoodes roseipes* (Muls.) of Sallé's collection. Crotch's type is a specimen from Deyrolle's collection without locality, that assigned to it being only a surmise. *Chnoodes sanguinipes* is about the size of *Exoplectra cruentipes*. It is scarcely so convex as that insect. The head and first segment of the abdomen are dark in some individuals, probably the females. There were five examples of it in Sallé's collection, and if not common it seems to have been met with on several occasions, especially in Mexico, whence Crotch's example probably came.

3. **Chnoodes cinctipennis.**

Sanguineo-rufus, nitidus, parce brevissime pubescens, creberrime distincte leviter punctatus, elytrorum disco nigro-æneo. Long. $2\frac{1}{2}$–3 millim.

Hab. GUATEMALA, Chiacam, San Juan, and Tamahu in Vera Paz (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Of the size of *C. terminalis*, and with the pubescence, as in that species, very fine and often quite denuded on the disc of the elytra. The whole of the body is red, the breast and middle of the abdomen being only indistinctly pitchy. The elytra are black, very shining, with a bronze or greenish reflection, the margin (excepting at the base near the suture) being widely red, more broadly so at their apex. The scutellum is red, at least in the middle, in bright and fresh examples wholly so.

About twenty examples of this *Chnoodes* were obtained by Mr. Champion.

4. **Chnoodes bipunctatus.**

Rufus, dense brevissime pubescens; capite (labro rufo), prothorace (angulis anticis prætermissis) elytrisque nigris, his puncto singulo in utroque juxta suturam mediano rufo, vix punctatis. Long. $3\frac{1}{2}$ millim.

Hab. MEXICO, Iguala in Guerrero (*Höge*).

Above black, scarcely visibly punctured, but not very shining, being densely clothed with a very short and fine grey pubescence. The head is quite even, with rather large eyes; the mouth and appendages are red. The thorax has the front angles very much deflexed and red; and the body beneath and legs are also red, the breast only being a little obscure in tint. The elytra are black, but have each a rather ill-defined and obscure, oblong, small red spot about the middle and near the suture. I have only seen the single example described above. It is somewhat doubtfully of this genus.

5. **Chnoodes decipiens.**

Orbicularis, niger, nitidus, densius pube brevi micante, in dorso denudato, vestitus; crebre ac distincte sed minute punctatus; capite, abdomine pedibusque sanguineis, prothoracis margine antico et laterali tenuiter flavis. Long. 2 millim.

Mas, capite rufo, prothoracis margine antico flavo.

Femina, capite prothoracisque margine nigris.

Hab. PANAMA, Bugaba (*Champion*).

This insect has given me a good deal of perplexity, owing to its rather close general

resemblance to an *Azya*, when the denuded patch is observable as it is in fine specimens; while others appear almost glabrous, owing to the pubescence being nearly all rubbed off. Of course the structure of the tibiæ will always separate it, and it is in addition much blacker, having, in fact, only a very faint metallic tint. The style of punctuation is also characteristic of this genus.

Five specimens.

DIORIA.

Dioria, Mulsant, Spec. Col. Trim. sécur. p. 936 (1850); Crotch, Rev. Coccin. p. 295.

1. **Dioria sordida.** (Tab. XII. fig. 1.)

Dioria sordida, Muls. Spec. Col. Trim. sécur. p. 937[1]; Crotch, Rev. Coccin. p. 296[2].

Hab. MEXICO, Cordova (*Höge*), Orizaba (*Sallé*), Yucatan (*coll. Crotch*); PANAMA, Bugaba, Volcan de Chiriqui, 2000 to 3000 feet, Tolé, San Lorenzo (*Champion*).—SOUTH AMERICA, Valparaiso [1] [2].

Crotch (*loc. cit.*) refers examples of a *Dioria* from Mexico to *D. setigera*, Muls., and states that he had not seen *D. sordida*; but in the Cambridge Collection are several examples, one labelled "*sordida*" in his own handwriting, from Deyrolle's collection, from Yucatan, whereas of *D. setigera* there are two only from Chili. They are closely allied, perhaps not distinct species; I therefore retain the name *D. sordida* for our insect.

Subfam. *ORTALIIDES*.

The Ortaliides are generally distinguished by their large finely-facetted eyes, which occupy a vertical position on the sides of the head, and by a coarse and broken style of punctuation. At present two genera only have been referred to the subfamily from the New World, viz. *Zenoria* and *Pseudoladoria*, Crotch. The typical species of *Ortalia* are, according to Mulsant, those found in Madagascar, but others occur in the Eastern Tropics.

The Ortaliides have the epistome not emarginate in front, in which they are said by Chapuis to differ from the Chnoodides. I cannot, however, follow the distinction.

Some remarkable insects, for which new generic divisions must be proposed, are here referred to the group.

NEAPORIA. = Prodilis Muls.

Tibiæ haud dentatæ vel incisæ; fossulæ coxales abdominales marginem apicalem segmenti primi haud attingentes; oculi verticales, magni, tenuissime reticulati; antennæ perbreves; palpi longi, robusti.

We have species of a genus of Ortaliides which are not *Zenoriæ*, in which (taking *Z. revestita* as the type) the "abdominal plates" so termed (the shallow coxal fossæ) are "complete," *i. e.* reach the hind margin of the segment. The punctuation appears

to me to be in general uniform—strong, even coarse, in some; the pubescence is thick, often denuded in a patch. The tibiæ are quite simple; the claws simple (they are said to be bifid in *Ortalia* and *Zenoria*).

1. **Neaporia plagioderina.** (Tab. XII. fig. 2.)

Ferruginea, capite prothoraceque testaceis, hoc medio, illo basi infuscatis; elytris saturate cæruleis, crebre fortiter punctatis, apice tenuiter rufo. Long. 4 millim.

Hab. PANAMA, Bugaba (*Champion*).

Orbicular, somewhat depressed; head and thorax yellow, but clouded with black at the base, and in the centre from the front to the base in the latter very finely punctured. The thorax narrow in front, the sides but little rounded, the front angles produced and depressed, neatly fitting the eyes, which, however, owing to their large size, can, I think, hardly be withdrawn; it is very transverse and arcuate, the base gently bisinuate and finely margined. The scutellum is large and black. The elytra have a depression on each side of the scutellum extending a little way down the suture; the callus is distinct, as in *Poria*; their sides are very finely margined, not at all explanate, sinuate for the reception of the hind coxæ.

One example.

2. **Neaporia indagator.** (Tab. XII. fig. 3.)

Testaceo-ferruginea, superne nigro-cærulea, ore epistomateque ferrugineis; prothorace brevi, tenuiter, elytris fortiter crebre punctatis. Long. 3 millim.

Hab. GUATEMALA, Sinanja in Vera Paz, Cerro Zunil, Las Mercedes, Volcan de Atitlan (*Champion*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

Var.? Prothoracis angulis anticis testaceis.

Hab. GUATEMALA, San Isidro, Volcan de Atitlan (*Champion*).

Upperside dark indigo-blue, thickly clothed with silvery-grey pubescence, which is generally more or less denuded on the front and middle of the elytra. The mouth and front of the epistome, mouth-organs, antennæ, legs, and body are ferruginous; the breast darker and coarsely punctured. The head and prothorax are very finely, the elytra strongly and sparsely, punctured; the punctures on the latter are distinct points, sometimes confluent, and becoming closer towards the sides. The prothorax is very short, arcuate in form, the front angles being prominent and depressed; the whole width is four times the length. The scutellum is distinct and triangular, punctured, and black. The epipleuræ are indistinctly yellowish, horizontally sinuate, and slightly fossulate for the reception of the hind femora.

Six examples of the type, and a single specimen of the variety.

3. **Neaporia cribrata.** (Tab. XII. fig. 4.)

Ore, antennis, pedibus corporeque infra ferrugineis ; capite prothoraceque nigris, fortiter crebre, illo confluenter punctatis ; elytris læte cæruleis, parcius fortissime punctatis. Long. 2·5 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Of the same form as *N. indagator*, but less pubescent and more strongly and deeply punctured, especially as regards the head and thorax. The palpi are stout, about as long as the head, their terminal joint long and feebly securiform. The antennæ are very short, not longer than half the eye. The prothorax is as short and wide as in *N. indagator*; its front angles project about half round the eye (when the head is extended); the sides are a little reflexed and very finely margined; the punctuation is very deep and here and there confluent. The elytra are of a beautiful steel-blue, very sparingly pubescent. A single example.

4. **Neaporia cærulea.**

Ore, antennis pedibusque ferrugineis; corpore subtus nigro vel piceo, superne nigro-cæruleo, nitido, parum pubescente ; capite prothoraceque subtilissime, elytris fortius punctatis. Long. 2 millim.

Hab. Panama, Bugaba (*Champion*).

Smaller and more orbiculate than *N. indagator*, and differing, moreover, in the following respects:—It is less pubescent ; the thorax is not so short, and has the sides converging in front, but the front angles though acute are less prominent, and therefore the whole thorax is not arcuate ; the base is less rounded, the hind angles being quite distinct. The body beneath is black. The sides of the elytra are narrowly reflexed.

5. **Neaporia metallica.** (Tab. XII. fig. 5.)

Oblongo-ovata, subdepressa, supra viridi-metallica nitida, parce pubescens; prothorace brevissimo, cum capite crebre distincte minute, elytris parcius et profundius punctatis ; corpore subtus, palpis pedibusque piceis, his articulo tertio, illis apicali nigrescentibus ; elytris singulis macula magna subrotundata rufa. Long. 2–3 millim.

Hab. Panama, Bugaba, Volcan de Chiriqui 3000 to 4000 feet, Tolé (*Champion*).

Head, especially the epistoma, golden pubescent; palpi yellow at their base, the apical joint and the tip of the second joint blackish ; antennæ very short, yellowish. Thorax very short and very wide, quite four times as broad as long, with rounded sides ; the margins are flattened and reflexed, the front angles acute and depressed, the base with a very fine marginal line; sparingly pubescent. The elytra are oblong, with straight sides, but their apex is widely rounded; they are shining metallic-green or dark blue, with a brassy reflection ; their margins are finely reflexed ; the punctuation is sparse but distinct ; the pubescence is sparse and very fine, nowhere hiding the surface, but uniform and velvety. The yellow spots on the elytra are not of the same size, that on the left being large and transverse, while the one on the right is rather

obsolete. The legs are pitchy-black at their bases, with yellow tibiæ and tarsi, of which, however, the bilobed apex is blackish.

This is a less convex insect than the preceding species, and has also the elytra more parallel on their sides. In the shortness of the thorax, the short antennæ, stout palpi, and other characters it agrees well with them. In one example from Bugaba the red spot is suffused so as to involve the whole disk of the elytra in a common spot reaching entirely across the wing-cases, but nearly separated at the suture.

6. **Neaporia argentifrons.** (Tab. XII. figg. 6 ; 6 *a*, maxillary palpus.)

Breviter oblonga, rufo-picea, nitida, tenuiter pubescens ; capite prothoraceque viridibus, subtilissime punctatis, hoc transverso, marginibus lateralibus leviter anguste reflexis, illo inter oculos argenteo-albido, vittis duabus nigro-viridibus ; scutello elytrisque castaneis, his parcius punctatis. Long. 2·5–3 millim.

Hab. Mexico, Toxpam (*Sallé*).

Var. Elytris pone medium et disco usque ad humeros indeterminate viridibus.

Hab. Guatemala, Zapote (*Champion*).

This species is nearly of the same size and form as *N. metallica*, and, considering the single example from Zapote as a variety, it may probably be a more northerly form of that species, differing mainly in colour. The head has the whole of the front and epistome shining silvery-white, with two posteriorly-abbreviated dark vittæ; and this is so also in the Zapote variety. The thorax has the usual oblique sulcus separating the middle portion which receives the head from the produced front angles. The palpi have the terminal joint blackish.

There are two examples from Toxpam, one of which we figure.

7. **Neaporia amabilis.** (Tab. XII. fig. 7.)

Breviter oblonga, rufo-picea, nitidissima, parce profunde punctata ; capite nigro-piceo, epistomate palpisque rufo-piceis ; prothorace viridi, transverso, angulis anticis valde prominulis, lateribus reflexis, disco parce minute punctato ; elytris cupreo-purpureis, parcius punctatis ; pedibus rufis. Long. 2 millim.

Hab. Guatemala, El Tumbador 2500 feet (*Champion*).

The form of this species is very similar to that of *N. metallica* and *N. argentifrons*. The head is more coarsely punctured than in either of them ; it is pitchy-black tinged with green, with the mouth and palpi pitchy-red. The thorax has its disk more even, there being less indication of an oblique sulcus, and it is of a dark green ; there is no pubescence to be seen on the whole upper surface. The elytra are of a brilliant coppery-purple, inclining to be castaneous ; and in this respect *N. amabilis* is somewhat like an example of *N. argentifrons* from Toxpam, but the punctures are much sparser and larger, and it is scarcely half the bulk of the latter. The colour of the elytra probably varies.

Only one specimen has been received.

8. **Neaporia unipunctata.** (Tab. XII. fig. 8.)

Valde convexa, suborbicularis, nitida, nigro-picea, superne subcærulea; capite prothoraceque subtiliter, elytris fortius punctatis, his macula magna in singulis, abdominis apice pedibusque rufis. Long. 1·25 millim.

Hab. Panama, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Somewhat resembling the smaller examples of *N. metallica*, but strongly convex, the margins of the elytra being almost hidden from above. The thorax is quite of a different form from that of *N. metallica*, being less wide, apparently about three times the length; the latter, however, seems actually greater than in *N. metallica*; it is also more shining and much more convex, and its front angles are more contracted and less explanate. The colour, moreover, is different, and the legs and tip of the abdomen are red.

9. **Neaporia pubescens.** (Tab. XII. fig. 9.)

Breviter oblonga, picea, pube brevi erecta dense vestita; prothorace brevi, valde transverso, rufo, crebre punctato; elytris cærulescentibus, macula magna discoidali haud bene discreta rufa, parcius sed crebre punctatis, punctis hic illic transversim confluentibus. Long. 2·5 millim.

Hab. Panama, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

This insect is allied to *N. metallica*, but is more convex, more densely pubescent, and differently coloured to that species. The thorax is in form very like that of *N. metallica*; its front angles are very prominent, forming a covering for the large eyes, which are no doubt, in repose, partially withdrawn behind them; the lateral margins are only very narrowly reflexed, and there is an oblique sulcus half across the disk behind the eyes. The epipleuræ are sinuate for the reception of the hind femora. The elytra, though bluish, have a tendency to become pitchy-red, and the legs are of that colour.

One example.

10. **Neaporia rugosa.** (Tab. XII. fig. 10.)

Convexa, oblongo-ovata, nigro-picea, superne atro-cærulea, crebre fortiter, elytris subrugose punctatis, his macula oblonga discoidali in singulis sanguinea; pedibus rufis. Long. 1·25 millim.

Hab. Panama, Tolé (*Champion*).

This insect, though superficially very like *N. unipunctata*, will, I think, prove to be abundantly distinct. The form of the thorax is more that of *N. metallica*, viz. wide, very short, with prominent rather explanate front angles, and a depression immediately behind the eyes. It is, however, in the punctuation that it differs very clearly from its allies, that of the thorax being as strong and distinct as that of the head, while that of the elytra is more close and more dense than in any of the other species here described. The mouth and tip of the abdomen are red. The elytra are distinctly pubescent.

One example.

11. **Neaporia compta.** (Tab. XII. fig. 11.)

Breviter ovalis, fere orbicularis, rufa; capite prothoraceque subtiliter, elytris cæruleis concinne fortius punctatis. Long. 2 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

Readily distinguished from any other species of the genus here described by its colour, which is wholly dark ferruginous-red, with the exception of the elytra. The latter are deep blue, with the sutural angle very slightly red. The scutellum is obscure, but is plainly reddish. The thorax is short, about three times as wide as long. The whole insect is moderately convex, clothed above with a short silvery pubescence; the head is very flat between the eyes; the puncturing of the head and thorax is very fine, but quite visible, that of the elytra much more distinct, not deep, and rather stellate; the tip of the elytra is very narrowly red, and the red pygidium (not quite covered) enhances the red appearance of the apex.

12. **Neaporia chiriquensis.** (Tab. XII. fig. 12.)

Breviter oblonga, convexa, rufo-ferruginea; capite (ore epistomateque exceptis), prothorace elytrorumque triente apicali nigro-cæruleis; capite elytrisque parcius fortiter, prothorace subtiliter punctatis. Long. 2·5 millim.

Hab. Panama, Volcan de Chiriqui (*Champion*).

The head is very deeply and almost rugosely punctured. The thorax is very short, four times as wide as long, the sides margined and reflexed, the front angles acute, depressed; the base has a very fine marginal line; the punctuation, though quite visible, is very fine and close. The scutellum is red. The elytra are rich deep red, but their apical third, extending further on the disk than at the suture or on the sides, is blue-black; the punctures are large, rather stellate, sparse, but thicker and here and there confluent near the scutellum; the narrowly reflexed margin is red all round. There is scarcely any pubescence visible in the single example before me.

13. **Neaporia guatemalana.**

Oblonga, nigra, subnitida, breviter canescens; elytris subcæruleis, ore, pedibus abdominisque apice rufis; prothorace brevi, transverso, cum capite creberrime punctato, elytris parcius sed crebre punctatis. Long. 2 millim.

Hab. Guatemala, Capetillo, Dueñas, San Gerónimo (*Champion*).

Var.? Parum angustior, prothorace interdum piceo, elytris subæneis.

Hab. Mexico, Jalapa (*Höge*), Amula in Guerrero 6000 feet (*H. H. Smith*).

More oblong than *N. cærulea*, with the thorax more transverse, being formed as in *N. metallica* and its allies, the base truncate, a little sinuate, the front angles prominent and reaching to the front of the eyes when the head is depressed; there is a very small punctiform depression behind the eyes. The whole upper surface is rather

densely hoary. In the Mexican examples it is denser and more unevenly combed, giving a mottled look. The example from Amula is wholly piceous, probably less mature. Possibly these represent a different species, but I cannot separate them at present.

14. **Neaporia cœlestis.** (Tab. XII. fig. 13.)

Oblonga, nigra, nitida, capite prothoraceque metallico-viridibus subtiliter, elytris læte cæruleis parce punctatis; ore, pedibus abdominisque apice rufis; prothorace valde transverso, lateribus anguste reflexis rufescentibus. Long. 2 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

This little species may be distinguished from *N. cærulea* by the same characters as *N. guatemalana*. From the latter the more brilliant coloration and the reflexed and reddish margin of the thorax, and the certainly more reflexed and wider margins of the elytra and their rather more sparse punctuation, will enable it to be separated.

Two specimens.

15. **Neaporia viridescens.**

Oblonga, nitida, nigra, tenuiter pubescens; superne viridi-metallica, prothorace transverso, margine laterali leviter reflexo; capite prothoraceque creberrime, elytris parcius punctatis. Long. 1·5 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 feet (*Champion*).

Smaller than any *Neaporia* I have seen, with the exception of *N. cuprea*. In its form and general characters it agrees pretty closely with *N. cœlestis*; but, besides the small size, the black legs seem to distinguish it as a species. The anterior femora are pitchy at their bases.

One example.

16. **Neaporia cuprea.** (Tab. XII. fig. 14.)

Oblonga, nitida, nigra, vix pubescens; capite prothoraceque nigro-cæruleis parcius distincte, elytris cupreis parce punctatis; pedibus nigris, tarsis fuscis. Long. 1·25 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

This is the smallest example of a *Neaporia* I have seen. It differs from *N. viridescens* in being narrower, the thorax especially so, its front angles being less expanded, the sides less reflexed, the surface more even, there being no oblique fossa behind the eyes, and more "cribrate," *i. e.* more distinctly punctate, and the same remark applies to the punctuation of the head. The elytra are also very distinctly punctured; they are coppery-purple, violet at the margins. The legs are black, with brownish-yellow tibiæ and tarsi. The palpi are quite black.

Although we have received only one example of this little *Neaporia*, there is no doubt it represents a distinct species. The want of pubescence may, of course, be

owing to its condition, but as a very short black pile is visible it is probably quite normal.

ORTALISTES.

Corpus oblongo-ovatum, valde convexum. Tibiæ simplices. Fossulæ coxales abdominales segmento longitudine æquales, extus apertæ. Antennæ perbreves.

I propose this genus for two species which, apart from the form of the whole insect, do not present any very striking positive characters. The body is rather suggestive of that of *Brachyacantha*; the head is nearly sunk in the thorax; the elytra very obtuse behind, and not covering the apex of the abdomen.

1. **Ortalistes obesus.** (Tab. XII. fig. 15.)

Breviter ovatus, valde convexus, ferrugineus; capite prothoraceque nigris, hoc limbo laterali, illo ore, antennis palpisque rufis, elytris plagia magna communi postica nigra. Omnium subtilissime vix visibiliter punctatis. Long. 3·5 millim.

Hab. PANAMA, Bugaba, David (*Champion*).

The pubescence of this insect is extremely fine and not easy to see. The mesosternum and a small part of the sterna in front and behind it are blackish, but the scutellum is red. The patch of the elytra occupies two-thirds of their surface, leaving the humeral region from the scutellum obliquely to the middle of the sides, and the apical margin from that point, red. In one specimen this margin unites rather widely with the basal portion, and the whole base for one-third its length is red. The thorax is short, contracted in front, not deeply cut out, more distinctly punctured than the elytra.

Three specimens.

2. **Ortalistes rubidus.**

Quoad formam *Ortalistei obeso* similis; statura paullo minore et colore toto ferrugineo distinguendus. Fere impunctatus, omnium tenuissime et brevissime pubescens. Long. 3·25 millim.

Hab. PANAMA, David (*Champion*).

This insect appears to differ from the last in its rather smaller size, wholly ferruginous colour, and by the thorax being hardly visibly punctate.

Two specimens.

3. **Ortalistes germanus.** (Tab. XII. fig. 16.)

Breviter oblongo-ovalis, convexus, tenuissime pubescens, vix punctatus; capite prothoraceque albis, hoc vitta mediana lata nigra. Long. 2 millim.

Hab. GUATEMALA, Cubilguitz, Sinanja, Tamahu, and San Juan in Vera Paz (*Champion*).

Very short, almost orbicular, but the outline is somewhat squarish. The thorax is arcuate, the front angles and sides much depressed, covering the head; the base appears to have a very fine marginal line; the punctuation is excessively fine and close,

and equal on the thorax and elytra. The scutellum is red or brownish. The elytra are entirely chestnut-red, but a little paler towards their apices. The pubescence is so fine that it is often worn off. The amount of black on the thorax varies: in some examples the greater part is black, the sides only being rather indefinitely white; in others the white extends like a round spot for a third of the width.

4. **Ortalistes pexus.**

O. germano quoad formam et staturam similis et affinis; piceus, minute sed distincte punctatus; pube brevi depressa, quasi detersa vestitus. Long. 2 millim.

Hab. MEXICO, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Senahu, Tamahu, Sabo, and San Juan in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*); PANAMA, San Miguel in the Pearl Islands (*Champion*).

Hardly so broad, especially across the thorax, as *O. germanus*, and perhaps a little more distinctly punctured. The colour is different, being uniform and of a dark pitchy-brown tint. The pubescence is not only more distinct, but seems of a different quality, and gives the impression of being brushed away from the suture on each side, thus reflecting the light as the insect is turned in different directions.

Specimens from Nicaragua and the Pearl Islands are almost black.

5. **Ortalistes immersus.** (Tab. XII. fig. 17.)

Brevis, fere orbicularis, subtilissime punctatus, tenuissime pubescens, niger; capite pedibusque flavis; corpore subtus elytrorumque disco late sanguineis. ♂.

Feminæ prothoracis margine antico et laterali anguste flavo, capite nigro-piceo. Long. 1·5 millim.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); PANAMA, Bugaba, David (*Champion*).

It is only when seen under favourable circumstances that this little insect appears pubescent; it is so closely punctured as to be semiopaque. The thorax, the base and margin of the elytra, as widely as one third of their breadth and more widely still at the apex, and the head and body in the female, are black. The very short antennæ and trophi are always yellow, as are the legs. We have received one example of the male, viz. the one from Bugaba, and a female from each of the other localities.

There is a species of *Cryptognatha* very similarly coloured to this insect.

Subfam. *SCYMNIDES.*

The Scymnides consist almost entirely of the genus *Scymnus*, one of the most generalized types of the Coccinellidæ. The genus itself has been divided by Mulsant, but he did not give his divisions, founded on the amount of development of the coxal fossettes, more than subordinate rank. They have, however, been adopted by recent European writers, with whom the ultimate analysis of minute characters is of higher importance than the synthesis of allied forms.

As is usual with very generalized types, *Scymnus* is represented by a large number of species in every part of the globe, often very closely allied to each other even when coming from distant parts. Chapuis has, in the 'Genera des Coléoptères,' very much restricted the group. I should go still further and eliminate from it the Rhizobiides, a subfamily separated by several peculiarities, and not of such universal distribution.

SCYMNUS.

Scymnus, Kugelann, in Schneider's Mag. i. p. 545 (1794).

Scymnus is a genus consisting of a host of small species, distributed in every part of the world, found on trees and on low herbage, living on small Aphides and possibly Coccidæ.

Subgenus DIOMUS, Mulsant.

Coxal fossettes on the first abdominal segment not forming more than a quarter circle.

1. **Scymnus thoracicus.** (Tab. XII. fig. 18.)

Coccinella thoracica, Fabr. Syst. Eleuth. i. p. 378 [1].
Scymnus thoracicus, Muls. Spec. Col. Trim. sécur. p. 951 [2]; Crotch, Rev. Coccin. p. 269 [3].

Hab. MEXICO, Chihuahua city, Zacualtipan, Jalapa (*Höge*), Chilpancingo in Guerrero (*H. H. Smith*), Toxpam (*Sallé*).—SOUTH AMERICA [1 2].

2. **Scymnus panamensis.** (Tab. XII. fig. 19.)

Suborbicularis, niger, nitidus, pubescens; capite, prothorace pedibusque aurantiacis; elytris subænescentibus, subtilissime punctatis. Long 1·75 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

There are two examples of this, which is a larger, broader, and more pubescent insect than the one referred to *S. volgus*, and the elytra have a distinctly brassy tinge. The body beneath is also wholly black, with the exception of the head (with all the mouth-organs) and the thorax. The genitalia are obtruded in one of the examples and are red. The thorax is three times as wide as long, with rather prominent front angles (in the specimen here referred to *S. volgus* the front margin is nearly straight), the margin being broadly cut out in front. The abdominal coxal fossettes appear to me to be ill defined externally, the internal side reaching almost to the edge of the segment.

3. **Scymnus volgus ?**

Scymnus (*Polius*) *volgus*, Muls. Opusc. Entom. iii. p. 147 (1853) [1].
Scymnus volgus, Crotch, Rev. Coccin. p. 271 [2].

Hab. PANAMA, Bugaba, David, Volcan de Chiriqui, Peña Blanca (*Champion*).—VENEZUELA, Caracas [1] [2].

The head, thorax, legs, and apical half of the abdomen are chestnut-red; the elytra black, not pubescent, impressed with minute, but distinct, and not very close punctures. In one example from the Volcan de Chiriqui the scutellum is red. The insect has very much the appearance of a *Cryptognatha* found at David, but from which its more oblong form and longer thorax will serve to distinguish it. I have seen an insect which appears to belong to this species named "*S. volgus.*"

The example from Caracas in the late Mr. Crotch's collection, from that of Reiche, is not a true *Scymnus*. There is therefore some doubt about the identification.

Subgenus PULLUS, Mulsant.

Coxal fossettes complete, forming a semicircle, the external side abutting on the epimera.

4. **Scymnus ferrugineus.**

Breviter ovatus, ferrugineus, pubescens, minute perobsolete punctatus, prothorace elytris angustiore. Long. 2 millim.

Hab. GUATEMALA, La Tinta in Vera Paz (*Champion*); PANAMA, San Miguel in the Pearl Islands (*Champion*).

Var. meso- et metasterno nigricantibus.

Hab. MEXICO, Chilpancingo in Guerrero (*H. H. Smith*).

Broadly ovate, of similar form to *S. apicalis*, Muls., but rather smaller, wholly ferruginous, with a grey, rather close pubescence. The sculpture of the elytra exhibits no trace of sulcation or of striation, but is very finely and closely punctate. The eyes are rather strongly facetted. Of the wholly yellow *Scymni* known to me, this is the largest and broadest; the European *S. abietis* is a more oblong and less convex insect. The specimen from Chilpancingo, which has the breast blackish, may possibly represent a distinct species. It appears to me to belong to the same section as *S. apicalis*.

5. **Scymnus loewi.** (Tab. XII. fig. 20.)

Scymnus Loewii, Muls. Spec. Col. Trim. sécur. p. 980 [1]; Crotch, Rev. Coccin. p. 271 [2].
Scymnus cinctus, Lec. Proc. Acad. Phil. vi. p. 137 [3].
Scymnus Lecontii, Crotch, Rev. Coccin. p. 264 [4].

Hab. NORTH AMERICA, New Orleans [3], Texas, California.—MEXICO [1] [2], Saltillo and San Pedro in Coahuila (*Dr. Palmer*), Ciudad in Durango, Aguas Calientes city, Jalapa, Mexico city (*Höge*), Omilteme and Chilpancingo in Guerrero (*H. H. Smith*), Guanajuato (*Sallé*); GUATEMALA, Zapote, Capetillo, Guatemala city (*Champion*).

The type of this species from Reiche's collection, now in that of the Cambridge Museum, is before me, and examples from the above localities agree with it. It is very near *S. cinctus*, Lec., and *S. lecontii*, Crotch, which Horn does not consider distinct.

We figure a specimen from San Pedro.

6. **Scymnus apicalis.** (Tab. XII. fig. 21.)

Scymnus apicalis, Muls. Spec. Col. Trim. sécur. p. 987 [1]; Crotch, Rev. Coccin. p. 271 [2].

Hab. Mexico [1] [2], Chilpancingo and Amula in Guerrero, Cuernavaca in Morelos (*H. H. Smith*), Ventanas in Durango and Acapulco (*Höge*); Guatemala, Quezaltenango, Guatemala city (*Champion*).

The distinguishing characters of this species, which is somewhat similar to the one described as *S. horni*, are its rather larger size (length 2–2½ millim.), the wider extent of the orange-red apex of the elytra and of the abdomen, of which only two segments at the base are decidedly black, and the faint indications of rows among the punctures at the base of the elytra near the suture, which may therefore be termed substriate at that part. I have seen a few examples from Amula with blackish legs and with blackish genitalia (although the abdomen is red), apparently females, the heads being, however, obscurely red.

Scymnus apicalis was described by Mulsant from specimens in Dejean's collection; and as the first quoted of these is from "Mexico," it will be better to exclude the supposed South-American specimens. It does not appear to have been identified by Horn. A quasi-type in Crotch's collection, with an H., and "Pennsyl." as locality, in no way corresponds to the description and is quite valueless as a type. One from Reiche's collection is from Caracas, while three others with a label "Yucatan," but which also bear the word "Caracas," are apparently not referable to Mulsant's species.

I therefore propose that the present insect, which agrees fairly with the description, and which we now figure, should be adopted to represent it.

Obs.—Crotch places *S. apicalis* as following *S. auritulus*, both in the 'Revision' and in his collection: it is altogether a wider and more distinctly marked insect than that species. About thirty examples are now before me.

7. **Scymnus bugabensis.**

Late orbicularis, niger, pedibus abdomineque obscure rufis, dense griseo-pubescens; elytris fortiter punctatis, juxta suturam seriebus duo vel tres punctorum magis distinctis, apice concolore; capite prothoraceque creberrime minute punctatis, antennis etiam nigris. Long. 2 millim.

Mas capite obscure rufo.

Hab. Panama, Bugaba (*Champion*).

A very distinct species of *Scymnus*, being broader than any yet noticed, with the elytra more distinctly punctured, and the striolæ approaching those of the genus *Sticholotis* in distinctness. The head is red in some examples, black in the others;

the eyes have a golden shining appearance, but in themselves are whitish or red; and the extreme tip of the front angle of the thorax is reddish in some examples. The pubescence is dense and shining, like that of *Azya*, but in many examples this is entirely absent. The base of the thorax is sinuous, and has a very fine marginal line. The metasternum is strongly, almost coarsely punctured in the middle, more closely and more finely so at the sides. The legs and abdomen are dark brownish-red; the coxal fossettes reach the margin of the first segment.

8. **Scymnus auritulus.**

Scymnus auritulus, Muls. Spec. Col. Trim. sécur. p. 985 [1]; Crotch, Rev. Coccin. p. 271 [2].

Hab. Mexico [1 2]. Northern Sonora (*Morrison*), Guanajuato (*Sallé*), Iguala in Guerrero, Zacualtipan in Hidalgo, Jalapa, Teapa in Tabasco, Tapachula in Chiapas (*Höge*), Xucumanatlan and Chilpancingo in Guerrero, Cuernavaca in Morelos (*H. H. Smith*); Guatemala, near the city, Aceituno (*Champion*).

Specimens from the localities quoted have been compared by me with the type from Reiche's collection, acquired by the late Mr. Crotch and now in the Museum at Cambridge.

The insect occurred abundantly in most of the localities mentioned.

9. **Scymnus horni.**

Suborbicularis, niger, capite, prothoracis lateribus et margine antico, pedibus, elytrorum apicibus anguste, abdominisque apice rufis, omnino breviter griseo pubescens. Long. 2 millim.

Hab. Mexico, Northern Sonora (*Morrison*), Ventanas, Jalapa (*Höge*); Guatemala, near the city (*O. S.*), Quezaltenango, Dueñas, San Gerónimo (*Champion*); Panama, Volcan de Chiriqui, Peña Blanca (*Champion*).

This insect is clearly very closely allied to the recently described *S. ardelio*, Horn (Trans. Am. Ent. Soc. xxii. p. 105). It was sent to us from Sonora labelled "*Scymnus marginicollis*": from that insect it differs (following Horn, loc. cit.) in having the legs red; but it does not agree with *S. ardelio*, according to the description. The apex of the elytra, in the great majority of the examples, is very narrowly red, as is also the pygidium, with the last ventral segment. Specimens which are presumably females have all the red parts more obscurely coloured, and the tips of the elytra and abdomen nearly black. There is apparently no tubercule on the first ventral segment. The insect is a true *Pullus*.

10. **Scymnus jansoni.**

Suborbicularis, convexus, niger, parce pubescens, ore, antennis, prothoracis lateribus, elytrorum vitta abbreviata, abdominis apice pedibusque saturate rufis. Long. 1·25–1·5 millim.

Femina? obscurior, elytrorum apicibus et pedibus tantum rufis.

Var. elytris vitta deficiente.

Hab. Mexico, Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); Nicaragua, Chontales (*Janson*).

The examples which I associate under this name agree in size, which is smaller than that of *S. auritulus*, but rather larger than the European *S. minimus*, and in having the sides of the thorax and apex of the elytra usually red. In some specimens (as in those which present an obscure red vitta on the disk of the elytra) the tips are not red. The whole of the mouth, the legs, including the trochanters, and the apex of the abdomen are red; two segments at the base of the latter are blackish, but passing so gradually into red that it is not possible to define the commencement of the latter colour.

Obs.—In less matured examples the thorax may be yellow, with a basal cloudy spot, and the vittæ may be widened and paler, uniting on the suture before the apex, which is cloudy.

11. **Scymnus högei.**

Oblongus, densius fulvo-pubescens, prothoracis basi quam elytra angustiore, niger, subtilissime punctatus, pedibus elytrorumque vitta nec basin nec apicem attingente rufis. Long. 1·5 millim.

Hab. Mexico, Zacualtipan in Hidàlgo (*Höge*).

Var.? Rufus, elytrorum basi, sutura apiceque indeterminate nigrescentibus.

Hab. Mexico, near the city (*Höge*).

The form is oblong, rather ovate, not narrowed behind, but with the thorax narrower than the elytra, and not forming a continuous outline with them. The elytral vitta is wider at the base, and for nearly half its length crutch-shaped, or like a long (,) comma. The mouth, antennæ, and legs are red.

The specimen which I think may be a variety of this insect, being precisely of the same form and size, has the base of the elytra blackish, this tint extending in a triangular way down the suture and along the margin and at the apex, but indeterminately. There is a single specimen only of each form.

12. **Scymnus bisbinotatus.** (Tab. XII. fig. 22.)

Obovatus, suborbicularis, nigro-piceus, nitidus, crebre, minute ac distincte punctatus, elytris singulis maculis duabus sanguineis parum distinctis, pedibus testaceis. ♀. Long. 1·75 millim.

Hab. Guatemala, Capetillo (*Champion*).

Rather broadly ovate, not very convex, the elytra wider in the middle than the thorax, sparsely pubescent (but worn in the unique example), dark pitchy-black. The elytra each have two dark red spots, one near the callus, and one, less distinct, near the apex. The legs are testaceous, with the tips of the tarsi darker, and are rather long and thin. The head and underside are pitchy-black. The coxal fossettes are complete, not touching the hind margin of the segment.

13. **Scymnus pictus.** (Tab. XII. fig. 23.)

Ovalis, niger, elytris postice macula transversa irregulari pedibusque aurantiacis. Long. 1 millim.
Mas, capite, prothorace subtus et ad latera rufis.

Hab. PANAMA, San Miguel in the Pearl Islands (*Champion*).

This little species is very distinctly oval in form, pointed behind, and it is rather strongly convex, and clothed with grey pubescence. The elytral red spot is placed at about one-third from the apex and quite free; it is rather more transverse in the female than in the male. The body beneath is almost wholly black; the prothorax is red in the male beneath, and with the sides indeterminately so, and the head is also red in this sex. The supposed female is smaller, and has the thorax and head black. The legs have rather wide femora, receiving the tibiæ in grooves, and are wholly orange-red. There are but two specimens of this species. I cannot recall to mind any *Scymnus* similarly marked.

14. **Scymnus coloratus.** (Tab. XII. fig. 25.)

Niger, suborbicularis, vix pubescens, nitidus, capite prothoraceque albis, hoc macula magna discoidali interdum marginem anticum attingente nigra; elytris vel nigris, vel nigris disco plus minusve sanguineo; pedibus flavis. Long. 1–1·75 millim.
Mas, capite albo; *femina*, capite infumato, elytrorum margine apicali late albo.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Capetillo (*Champion*); PANAMA, Volcan de Chiriqui, Peña Blanca, Tolé (*Champion*).

This is a variable and perplexing species. The examples which I suppose to be the males are more orbiculate and larger than the three others, which from their darker heads appear to be females; and in these males (?) two have the elytra more or less suffused with a blood-red discoidal patch, viz. one from Teapa and one from the Volcan de Chiriqui, while one from the latter locality and one from Peña Blanca have them wholly black. The body beneath is black. The legs are yellow. The three females (?) are one from Teapa, one from Capetillo, and one from Tolé; they have the thorax narrowed in front, and its sides continuous in outline, or very nearly so, with that of the elytra. *S. coloratus* has very much the appearance of an *Ortalistes* (especially of *O. immersus*), and, indeed, I think it may have to be removed to that genus. The distinction between *Scymnus* and the allied genera is very slight, as may be seen by reference to Chapuis, in Lacordaire's 'Genera des Coléoptères,' xii. p. 206.

The example from Peña Blanca is more like that from Chiriqui, but is half the size.

15. **Scymnus tardus.**

Scymnus tardus, Muls. Spec. Col. Trim. sécur. p. 955 [1]; Crotch, Rev. Coccin. p. 270 [2].

Hab. MEXICO, Jalapa (*Höge*), Atoyac in Vera Cruz, Teapa in Tabasco (*H. H. Smith*); GUATEMALA, Zapote (*Champion*); PANAMA, Bugaba, San Miguel in the Pearl Islands (*Champion*).—BRAZIL [1] [2], Bahia (*coll. Crotch, ex Reiche*).

I have referred the Central-American examples to this species on the authority of a specimen in Mr. Crotch's collection, and on others I have seen so named, rather than from their agreement with Mulsant's description. The latter seems to have been drawn from a female example, having the head black, and from either a unique example or from quite insufficient material. Our examples, ten in number, agree in having the head and thorax quite whitish-yellow. They are very variable in size and colour, but are all rather pubescent, and have the elytra brown, blackish, or black, with a red disk, or a faint red marking on each, and the apex always white, except in those from Bugaba and the Pearl Islands.

Judging from examples in Crotch's collection, the paler ones might be equally well referred to *S. tantillus* or *S. pallidipennis*, Muls. (the specimen of the latter is the type), the descriptions of which are inadequate and inconclusive.

At present I regard these names as indicating one widely spread and variable insect; but possibly our examples from Mexico and Guatemala are distinct from those from Panama.

16. **Scymnus mutatus.**

Ovatus, capite, prothorace, pedibus abdomineque pallide testaceis; elytris nigris, macula magna discoidali oblongo-ovata in singulis aurantiaca, pectore nigricante; tenuiter pubescente, subtiliter creberrime punctatus. Long. 1·5 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Var.? elytrorum apicibus pallidis.

Hab. MEXICO, Cuernavaca in Morelos (*H. H. Smith*).

Var.? minor, elytris plus minusve nigricantibus, basi saltem nigro.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Var.? prothorace macula triangulari mediana marginem apicalem vix attingente.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

Var.? minor, nitidior, elytrorum basi, sutura margineque pone medium nigris. Long. 1 millim.

Hab. PANAMA, Peña Blanca (*Champion*).

The single specimen from the Volcan de Chiriqui, which I take for the type of this species, is a very distinctly marked and rather convex, finely pubescent insect, with the head and thorax nearly white, the elytra dark pitchy-black, with a large, oval, and rather obliquely placed orange spot on each. The underside, with the exception of the breast, is luteous. The legs are testaceous. The coxal fossettes are deep, but only reach over half the segment. The Mexican examples are doubtfully associated with it: the one from Cuernavaca is a little smaller and has better defined pubescence; the colour and markings are very similar, and at the same time are very suggestive of those of

S. jansoni. The specimens from Teapa vary a good deal among themselves, the thorax in some of them being white, without markings, in others with a more or less developed spot on the base, with its apex sometimes reaching the front margin; all these, with one exception, have the head white, deeply sunk in the thorax.

17. **Scymnus granum.**

Breviter ovatus, suborbicularis, niger, parce pubescens, pedibus rufis, subtiliter punctatus. Long. 1 millim.

Hab. GUATEMALA, Dueñas (*Champion*).

The two specimens of this minute insect agree in being wholly black, with the legs red and the mouth-organs testaceous; the puncturing is just visible under a Coddington-lens; the pubescence is greyish, sparse, and irregularly upright. The outline is tolerably uniform; the thorax has rather straight sides, narrowing in front, and with prominent front angles. It is less shining than the following species (*S. grumus*), without being opaque.

In dealing with such very small insects in an obscure genus it is, I think, better to abstain from attempting to describe details which can only be established on longer series, and to give only such characters as are apparent and may enable other specimens from the same locality to be recognized.

18. **Scymnus grumus.**

S. grano iterum similis et affinis, perparum major et nitidior; niger, nitidus, capite, pedibus, abdominis elytrorumque apicibus tenuiter pallidis, parce pubescens, prothorace lato, antice haud multo angustiore. Long. 1·2 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

A little larger than *S. granum*, and especially more shining; the pubescence is apparently a good deal rubbed off, but the surface is smoother. The head is clear yellow, and the legs are very pale, as is the abdomen, with the exception that the basal portion is black in an indeterminate degree, but extending over two segments.

A specimen from Zapote perhaps belongs to the same species.

19. **Scymnus corpusculus.**

S. grano similis et affinis, oblongus, niger, nitidus, parce pubescens; capite, prothoracis lateribus, pedibus elytrorumque apicibus tenuiter pallide rufis, feminæ corpore obscuriore. Long. 1·5 millim.

Hab. MEXICO, Atoyac in Vera Cruz (*H. H. Smith*).

Rather more densely pubescent than *S. granum*, more parallel in form, and more shining. The thorax is as wide in front as behind, and with acute, though depressed, front angles. The head and sides of the thorax are red, and the front margin of the latter is very narrowly pitchy-red in some examples. The puncturing is very fine, scarcely visible under a Coddington-lens. The abdomen appears not to be red, as in

S. grumus, and in those examples I suppose to be females the head and thorax are quite obscure. Of these three small species the present is the largest, it being also more oblong than the others.

Eight examples are before me.

20. **Scymnus aspersus.** (Tab. XII. fig. 26.)

Breviter oblongus, luteus, pubescens, prothorace antice angustato, basi infuscato, vel medio indeterminate fusco; elytris basi sutura, margine laterali ad medium ampliato, ante apicem desinente, punctoque discoidali nigricantibus. Long. 1 millim.

Var. Prothorace saturatiore, elytris nigro-variegatis.

Hab. MEXICO, Toxpam (*Sallé*), Teapa in Tabasco (*H. H. Smith*); GUATEMALA, near the city, Dueñas (*Champion*).

This little insect seems to be very variable. The two examples from Teapa appear to have, at first sight, four spots on the elytra, but the basal ones are only prolongations of the basal black on the disk. The black colour extends down the margin as far as the posterior discoidal spot, and is there widened as if it would join it: in two examples the spot returns in the form of a vitta, leaving only a vague yellow ring on the elytra, the scutellar region being more widely suffused. The breast is pitchy. This is one of the smallest of the *Scymni*, but is scarcely so small as *S. grumus* and its allies.

Seven specimens. One from Teapa is figured.

21. **Scymnus diversus.**

Breviter oblongus, luteus, pubescens; prothorace maculis duabus anterioribus, duabus posterioribus vel tribus basalibus haud bene discretis fuscis; elytris plaga laterali pone medium provecta nigra, interdum macula parva suturali postmediana. Long. 1 millim.

Hab. GUATEMALA, San Gerónimo and Cahabon in Vera Paz (*Champion*).

This insect in form and general appearance is very like *S. aspersus*; it is, however, differently marked. The thorax in the example from San Gerónimo has four distinct nearly black spots, and the elytra have a wide lateral blotch, extending halfway across each elytron. There are indications of black markings here and there on the elytra, one of which becomes a distinct spot on the suture at about one-third from the apex.

In the example from Cahabon the thoracic spots are less distinct, but more wedge-shaped, and there is in addition a central basal spot. The body beneath and legs are yellow.

I have not been able to identify any of the following species, and we have not received any *Scymni* from Yucatan.

22. **Scymnus pilatii.**

Scymnus Pilatii, Muls. Spec. Col. Trim. sécur. p. 990 [1]; Crotch, Rev. Coccin. p. 272 [2].

Hab. Mexico, Yucatan [1 2].

23. **Scymnus thelys.**

Scymnus thelys, Muls. Opusc. Entom. iii. p. 155 (1853) [1]; Crotch, Rev. Coccin. p. 272 [2].

Hab. Mexico, Yucatan [1 2].

24. **Scymnus bilucernarius.**

Scymnus bilucernarius, Muls. Spec. Col. Trim. sécur. p. 997 [1]; Crotch, Rev. Coccin. p. 272 [2]

Hab. Mexico, Yucatan [1 2].

25. **Scymnus atomus.**

Scymnus atomus, Muls. Spec. Col. Trim. sécur. p. 998 [1]; Crotch, Rev. Coccin. p. 273 [2].

Hab. Mexico, Yucatan [1 2].

VEDALIA.

Vedalia, Mulsant, Spec. Col. Trim. sécur. p. 905; Crotch, Rev. Coccin. p. 281.

The type of *Vedalia* is the Mexican insect recorded below, much confusion appearing to have arisen by Crotch having associated *Vedalia sieboldi* with species from India and elsewhere, which Mulsant placed, and as I think properly enough, in *Rodolia*. Again, the characters of *Vedalia*, as given by Mulsant, are very unsatisfactory and even illusory: that the tibiæ are rounded or angular on their exterior margin seems to me an error of description. They are very flat, and shut partly into grooves of the femora; but they are neither emarginate nor angular, and the association of these genera with the Exoplectrides is quite erroneous. *Vedalia*, in fact, approaches nearest to *Novius*, a Palæarctic genus occurring in Asia and Japan. The claws are bifid. The coxal fossettes are well marked, nearly reaching the end of the segment, but not complete.

1. **Vedalia sieboldi.** (Tab. XII. fig. 24.)

Vedalia Sieboldi, Muls. Spec. Col. Trim. sécur. p. 905 [1]; Crotch, Rev. Coccin. p. 281 (*Rodolia*) [2].
Ortalia lama, Sallé, in litt.

Hab. Mexico [1 2], Orizaba, Guanajuato, Yolotepec (*Sallé*).

The examples from Guanajuato and Orizaba differ slightly from those from Yolotepec in having the whole metasternum, with the epimera, and even the trochanters and coxæ, black, and the first-named have the black mark near the scutellum less developed. Specimens in the Cambridge collection, one of which is typical, being the example from Westwood, have the breast infuscate. The antennæ are scarcely longer than the palpi, red, with an elongate, three-jointed club. The abdomen has six segments in the female (?), five segments only clearly visible in the male (?). The elytral epipleuræ are

narrow, flat, grooved at the inner edge for the reception of the margins of the abdomen (in *Rodolia* they are wide and much inclined).

Five examples. We figure one from Orizaba.

Subfam. *EPILACHNIDES.*

The Epilachnides form with the Scymnides the most generalized group of the Coccinellidæ; like them, they are found with very little modification of form in every part of the world, and the great majority of the species belong to the typical genus *Epilachna*, the subgenera *Chnootriba* from Africa, and *Lasia* and *Cycnegetis* from Europe, being very little differentiated, the two latter containing but a single species each, and *Chnootriba* only three.

In the Epilachnides, however, we meet with an important variation in habit, the species being all phytophagous, feeding on the leaves of Solanaceæ and Cucurbitaceæ, and the mandibles are tridentate. They are described as multidentate by Mulsant, but in the species I have dissected (*E. mexicana*, *E. borealis*, *E. abrupta*) there is one sharp spine-like tooth in addition to the bifid apex usual in the Coccinellidæ.

The species of this subfamily are (as I have observed in the generalized type of other families) very subject to variation, and some of them, as *Epilachna borealis*, are very widely distributed; and the species are very little differentiated from each other, rendering their determination often very difficult, the type of variation in one species being repeated in other nearly related species inhabiting the same region.

EPILACHNA.

Epilachna, Chevrolat, in d'Orbigny's Dict. Univ. Hist. Nat. v. p. 359 (1844).

About two hundred and forty species of this genus have been described, but the names of a good many of these must be regarded as synonyms. They are more abundant in the tropics than in the temperate districts; on the other hand, some species are found at elevations up to 8000 feet.

In Crotch's "Revision of the Coccinellidæ of the United States" [Trans. Am. Ent. Soc. iv. pp. 363–382 (1873)] the genus *Epilachna* is altogether omitted, and it would appear from the remarks of Mr. J. B. Smith (Ent. News, 1893, p. 197) that one at least of the species is gradually extending over the Eastern United States. Three are given from North America in Henshaw's 'Catalogue' (1885).

A. *Elytra widest a little below the shoulders.*

1. Epilachna abrupta. (Tab. XIII. fig. 1.)

Oblonga, subovata, nigra, nitida; elytris testaceis, dense minute punctatis, sutura margineque nigris, hac interdum in maculam medianam ampliata. Long. 10–12 millim.

Hab. Costa Rica, Volcan de Irazu 6000 to 7000 feet (*Rogers*); Panama, Bugaba, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Head, thorax, body beneath, the margins, epipleuræ, and suture of the elytra jet-black; the disk of the elytra pale testaceous (in life pearly and metallic), often with a spot united with the margin in the middle, or a slight widening of the black in that part looking like the commencement of a fascia. The margin of the elytra is expanded round its entire length, the expanded part being a little rugose. The coxal fossettes are not very distinctly defined. This insect belongs to the "*E. proteus*" group of the genus, but appears quite distinct in form, as well as in the sparseness of the pubescence, from any of the numerous varieties of that species. I have a very similar but distinct insect from Colombia.

Mr. Champion met with a long series of examples on the Volcan de Chiriqui, feeding on a very spiny species of Solanaceous plant, and Mr. Rogers sent about a dozen from Irazu. Only one example occurred at Bugaba. The yellow portion of the elytra is, Mr. Champion informs me, burnished with gold in life, rendering this a very beautiful and striking object.

2. **Epilachna tumida.** (Tab. XIII. fig. 2.)

Late subcordata, valde convexa, nigra, haud pubescens, elytrorum disco tumido, gibboso, plaga sanguinea; prothorace quam elytra duplo angustiore, his marginibus explanatis, creberrime, ad apicem confluenter punctatis. Long. 12–13 millim.

Hab. Costa Rica (*Van Patten*), R. Sucio, Volcan de Irazu (*Rogers*).

Black, the disk of the elytra raised in a tumid manner, with a deep blood-red broad stripe on each, leaving the suture narrowly black; the elytral margins expanded and a little reflexed at the extreme edge, of nearly equal width from the base to the apex, the widest part a very little below the shoulders.

This insect is not very nearly allied to any *Epilachna* yet described; in colour it is a little like *E. extrema*, but the strongly elevated tumid disk of the elytra is unlike anything known to me in this genus, if we except a much smaller very peculiar species from Ecuador *. Numerous examples were obtained.

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* **Epilachna pustulifera,** n. sp.—Late ovata, nigra, subopaca, tenuiter pubescens; elytris quam prothorax duplo latioribus, marginibus præsertim ad humeros, late expansis, singulis in medio juxta suturam, in tuberculum corallinum elevatis. Long. 8 millim.

Hab. Colombia, Medellin.

This remarkable insect cannot be mistaken for any other yet described. The blood-red tubercles, one on each elytron near the middle of the suture, take their rise in an oblong spot of the same colour. The general form is that of the "*E. proteus*" group. It is slightly pubescent.

Two specimens.

3. **Epilachna plagiata.** (Tab. XIII. fig. 3.)

Oblongo-ovata, valde convexa, nigra, nitida, dense brevissime pubescens; elytrorum marginibus modice explanatis, in medio latissimis, disco macula magna transversa plagaque lata versus apicem, juxta suturam sanguineis ornato. Long. 10 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Oblong-ovate, the thorax narrower, but not very strikingly so, than the base of the elytra, and hence the oval outline is not much interrupted at their junction. The expanded edge of the elytra is widest in the middle and narrowed towards the base and the apex. Their disk is extremely closely, finely and evenly punctured, and thickly clothed with a pubescence that does not prevent their surface shining. The blood-red patches are very distinctly marked: the basal pair look as if they would form a fascia, but are abbreviated externally, and are interrupted at the suture; the posterior pair are twice as long as wide, rather pointed towards the apex.

4. **Epilachna erichsoni.**

Epilachna erichsoni, Crotch, Rev. Coccin. p. 58[1].

Hab. PANAMA, Veragua (*Mus. Berol.*)[1].

I have not seen the type of this species. It must be near to the insect here described as *E. plagiata*, but the elytra in *E. erichsoni* are described as being "dark metallic green," and the insect from Chiriqui is larger.

B. *Elytra ovate, widest a little above the middle.*

5. **Epilachna olivacea.**

Epilachna olivacea, Muls. Spec. Col. Trim. sécur. p. 808[1]; Crotch, Rev. Coccin. p. 62 (pars)[2].

Hab. MEXICO[1 2], Cordova (*Höge*), Toxpam (*Sallé*); GUATEMALA (*Sallé*), Ostuncalco 7500 feet, Totonicapam 8500 to 10,500 feet, Quiché Mountains 7000 to 8000 feet (*Champion*).

We received a series of twenty-five examples from Ostuncalco, showing very little variation in size and colour; others from Mexico or Guatemala in the Sallé collection are darker, but of the same form and size. Three of the five examples placed under *E. olivacea* in the Cambridge Museum belong to *E. obscurella*, which appears to me to be more nearly allied to *E. varivestis*, but separable from both it and *E. olivacea* by the black legs and trophi.

6. **Epilachna picescens.**

Oblongo-ovatis, picea, superne nigro-picea; prothorace maculis tribus piceis ægre distinctis; elytrorum marginibus modice expansis, dilutioribus. Long. 11 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Larger, more widely ovate, and with the margins more widely expanded than in

E. olivacea, and differing from that species in colour. The upperside is pitchy, with the head and thorax and the margins of the elytra pitchy-red; the whole of the underside, with the legs, mouth, antennæ, and epipleuræ, is pitchy-red. The thorax has often three obscure oblong pitchy spots, but often only the middle one is visible. The punctuation is very fine, but just visible. The suture is paler, and the pubescence has a plum-bloom appearance. Although allied to *E. olivacea* and *E. tristis*, I have little doubt the five examples captured by Mr. Champion at Bugaba represent a very distinct species.

7. **Epilachna tristis.**

Oblonga, subovata, nigra, confertissime minute punctata, pube brevissima cinerea vestita; elytris margine ampliata, antice latissimis; labro, geniculis tarsisque subtus flavescentibus. Long. 10 millim.

Hab. Mexico, Chiapas (*Sallé*).

The labrum, base of the palpi, antennæ (excepting the club), tips of the femora and extreme bases of the tibiæ, and the basal joint and soles of the tarsi in this insect are rufous, all the other parts being black, with a faintly bluish tint. The most important distinction between this and *E. olivacea*, and that which leads me to give it specific rank, is the widened epipleural margin at the base, the elytra there being twice as wide as the thorax, thus bringing this species into Section A. It will be seen that in *E. olivacea* the thorax is not much narrower than the elytra at their base. And this is a character on which Mr. Crotch attempted, and I think with some success, to divide the perplexing forms of *E. proteus* into species. One example only of this insect has been received; it was labelled *E. obscurella* in the Sallé collection, which species, however, it only resembles in having the legs nearly black.

8. **Epilachna nigrocincta.** (Tab. XIII. figg. 4, 5, 6.)

Epilachna nigrocincta, Muls. Spec. Col. Trim. sécur. p. 716 (1851)[1]; Crotch, Rev. Coccin. p. 62[2]
[nec Thomson, Arch. Ent. ii. p. 237 (1858); Crotch, Rev. Coccin. p. 73].

Hab. Mexico[1 2], Chilpancingo 4600 feet, Omilteme 8000 feet, and Xucumanatlan 7000 feet, all in Guerrero (*H. H. Smith*), Mochitlan in Guerrero (*Baron*), Esperanza, Boca de Monte (*Höge*), Toxpam, Parada, Yolos (*Sallé*).

Var. α. (Fig. 5.)

Epilachna nigrocincta, var. α, Crotch, Rev. Coccin. p. 62.

Hab. Mexico, Parada (*Sallé*).

Var. β. (Fig. 6.)

Var. α similis, sed cum vitta altera margini propiore, et juxta apicem ad fasciam obliquam conjuncta suturam vix attingente.

Hab. Mexico, Canelas in Durango (*Becker*).

This pretty variety is similar to var. α; but a second vitta, which is only disunited

from the callus by a narrow space, runs into the margin at one-third from the apex, and emits a ramus from the bend towards the suture.

I have only seen the four examples sent by Becker, of which we figure one.

9. **Epilachna vincta.** (Tab. XIII. fig. 7.)

Epilachna vincta, Crotch, Rev. Coccin. p. 63 [1].

Hab. British Honduras (*Blancaneaux*); Guatemala [1], Aceituno, Capetillo (*Champion*); Costa Rica [1], San Francisco 4500 feet (*Rogers*).

Apparently not a common species, only seven examples having been received by us.

10. **Epilachna calligrapta.** (Tab. XIII. fig. 8.)

Oblongo-ovata, nigra, nitida, vix pubescens; elytris luteis, area basali pone scutellum et supra callum humeralem ampliata, punctisque quinque in singulis tribus intermediis fasciam obliquam præbentibus, sutura tenuiter nigris. Long. 7 millim.

Hab. Panama, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Very like *E. vincta*, but at once distinguished by the broader and black thorax, the black body and legs, by the mark on the callus being produced further back, by the additional spot between this mark and the suture, and by there being only one subapical spot. Two specimens were obtained by Mr. Champion.

This insect has a very Chrysomeloid appearance, and is suggestive of a species of *Calligrapha*.

11. **Epilachna mexicana.**

Coccinella (*Epilachna*) *mexicana,* Guér. Icon. Règne Anim., Ins. p. 319 [1].

Epilachna mexicana, Muls. Spec. Col. Trim. sécur. p. 731 [2]; Crotch, Rev. Coccin. p. 61 [3]; Henshaw, List of Coleopt. of America north of Mexico, p. 48 (1885) [4]; E. Dugès, Ann. Soc. Ent. Belg. 1886, pp. 40–42, t. 3. figg. 23–33 (metamorphoses) [5].

Hab. North America [4].—Mexico [1 2 3], Atlixco, Durasnal, Juquila, Oaxaca, Toxpam, Toluca, Orizaba (*Sallé*), Guanajuato (*Sallé*, *Dugès*), Chilpancingo, Omilteme 8000 feet, Amula, and Xautipa, all in Guerrero, Cuernavaca in Morelos, Mexico city (*H. H. Smith*), Tacambaro, Zacualtipan, Morelia in Michoacan, Jalapa (*Höge*), Mexico city (*Dr. Palmer*).

The Isthmus of Tehuantepec is the southern limit of this species. It is apparently really distinct from *E. defecta*, though hardly differing, except by the presence of a basal yellow spot on the elytra. The three apical spots are sometimes confluent, but not so often as in *E. defecta*.

Some very small examples (seven to eight millimetres in length) occurred at Tacambaro. The legs are generally entirely black.

According to Dugès [5], the insect lives upon *Cestrum nocturnum* (a Solanaceous plant) and various Cucurbitaceæ.

12. **Epilachna defecta.** (Tab. XIII. figg. 9, 10, 11.)

Epilachna defecta, Muls. Spec. Col. Trim. sécur. p. 733 [1]; Crotch, Rev. Coccin. p. 61 [2].
Epilachna fuscipes, Muls. Spec. Col. Trim. sécur. p. 735 [3].

Hab. MEXICO [1 2 3], Alvarez Mountains (*Dr. Palmer*), Tampico in Tamaulipas (*Richardson*), Orizaba, Coscomatepec, Oaxaca, Yolos, Juquila, Chiapas (*Sallé*), Omilteme in Guerrero, Atoyac in Vera Cruz (*H. H. Smith*), Misantla (*F. D. G.*), Jalapa, Tapachula in Chiapas (*Höge*), Teapa in Tabasco (*Höge & H. H. Smith*); GUATEMALA (*Sallé*), Chinautla and Aceituno (*Salvin*), Panima, Purula, Teleman, and San Juan, all in Vera Paz, Dueñas Capetillo (*Champion*); HONDURAS (*Sallé*); NICARAGUA, Chontales (*Janson, Belt*); COSTA RICA (*Van Patten*), Volcan de Irazu (*Rogers*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).—COLOMBIA [1 2 3].

Very abundant from Southern Mexico to Colombia. The variety named *fuscipes* has the head and thorax more or less red or yellow, and in these lighter-coloured forms the body and legs are also red or pitchy-red. Usually *E. defecta* has the femora spotted beneath or entirely pitchy-black, and the tibiæ and tarsi red. An entirely black variety occurs with only the tibiæ and tarsi and tips of the femora, and the mouth and trophi, orange-yellow. Examples of this form, with intermediate ones having only the two basal yellow spots, occurred at Tapachula in Chiapas, at Capetillo, and in Costa Rica.

We figure three examples: fig. 9, a fairly typical form from Capetillo; fig. 10, a variety from Tapachula; fig. 11, the var. *fuscipes*, Muls., from Vera Cruz.

According to Sallé [2], it lives upon *Solanum nigrum.*

13. **Epilachna borealis.** (Tab. XIII. figg. 12–16.)

Coccinella borealis, Fabr. Syst. Ent. p. 82 (1775) [1]; Syst. Eleuth. i. p. 368 [2]; Mant. i. p. 58 [3]; Oliv. Ent. vi. p. 1021, t. 3. fig. 27 [4].
Epilachna boreulis, Muls. Spec. Col. Trim. sécur. p. 826 [5]; Crotch, Rev. Coccin. p. 64 [6].
Coccinella immaculicollis, Chevr. Col. Mex., Cent. i. fasc. 3, no. 100 (Nov. 1834) [7].
Epilachna æquinoctialis, Muls. Spec. Col. Trim. sécur. p. 824 [8]; Crotch, Rev. Coccin. p. 63 [9].
Epilachna particollis, Muls. Spec. Col. Trim. sécur. p. 810 [10].
Epilachna indiscreta, Muls. Opusc. iii. p. 107 [11].
Coccinella 13-*notata,* Latr. in Humb. & Bonpl. Obs. Zool. ii. p. 67, t. 34. fig. 8 (1833) [12].
Epilachna discincta, Weise, Deutsche ent. Zeitschr. 1890, p. 21 [13].

Hab. NORTH AMERICA [1 2 4 6], United States [5]. — MEXICO [5 10], Parras in Coahuila (*Dr. Palmer*), Presidio (*Forrer*), Ventanas and Villa Lerdo in Durango, Iguala in Guererro, Huetamo in Michoacan, Cordova, Las Vigas, Jalapa, Tapachula in Chiapas (*Höge*), Atlixco, Guanajuato, Orizaba, Toxpam, San Andres Tuxtla, Catemaco, Playa Vicente, Oaxaca, Panistlahuaca (*Sallé*), Vera Cruz and Tuxpan (*Chevrolat* [7]), Chilpancingo, Venta de Peregrino, Xucumanatlan, and Rio Papagaio in Guerrero, Cuernavaca in Morelos, Fortin in Vera Cruz, Teapa and Frontera in Tabasco (*H. H. Smith*), Orizaba (*H. H. S. & F. D. G.*), Temax in North Yucatan (*Gaumer*);

British Honduras, Rio Sarstoon, Rio Hondo, Belize (*Blancaneaux*); Guatemala (*Sallé*), Panzos, Teleman, La Tinta, Chacoj, Chiacam, San Juan, Lanquin, Sabo, Purula, and San Gerónimo in Vera Paz, Panajachel, El Tumbador, Las Mercedes, Paraiso, Cerro Zunil, Volcan de Atitlan, Pantaleon, Mirandilla, Zapote, Dueñas, Capetillo (*Champion*), Chimaltenango, Coban (*Conradt*); Honduras, San Pedro [13]; Nicaragua, Chontales (*Belt, Janson*); Costa Rica (*Van Patten*), Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui, David, Taboga I. (*Champion*). — South America [5], Colombia [9], Brazil, Buenos Ayres [8 9]; Antilles [5], Cuba.

We figure five specimens of this very variable species: fig. 12, a typical example from San Gerónimo; fig. 13, the var. *æquinoctialis*, Muls., from Costa Rica; fig. 14, a variety from Jalapa; fig. 15, the var. *immaculicollis*, Chevr., from Orizaba; fig. 16, the var. *discincta*, Weise, from Frontera in Tabasco.

The earlier stages of this insect are described by French (Canad. Ent. 1883, pp. 189–191), who gives *Echinocystis lobata*, or common prickly cucumber, as a food-plant.

According to J. B. Smith, who has described and figured the egg, larva, pupa, and imago (Ent. News, 1893, pp. 197–199, figg. 1–3), and also the parts of the mouth of the imago (*op. cit.* pp. 123–125, fig. 1), *E. borealis* is steadily becoming more abundant in the Eastern United States, and has in some localities become a serious pest on Cucurbitaceous plants of all kinds.

Mr. Champion has also noticed its destructive habits in Central America.

14. **Epilachna varivestis.** (Tab. XIII. figg. 17–19; 20, larva.)

Epilachna varivestis, Muls. Spec. Col. Trim. sécur. p. 815 [1]; Crotch, Rev. Coccin. p. 62 [2].

Epilachna varipes, Muls. Spec. Col. Trim. sécur. p. 812 [3].

Epilachna murina, Muls. Spec. Col. Trim. sécur. p. 814 [4].

Epilachna corrupta, Muls. Spec. Col. Trim. sécur. p. 815 [5]; Henshaw, List of the Coleopt. of America north of Mexico, p. 48 (1885) [6].

Hab. North America [6].—Mexico [1 2 3 4 5], Saltillo and Monclova in Coahuila, Alvarez Mountains, Hacienda de Bleados in San Luis Potosi (*Dr. Palmer*), Presidio (*Forrer*), Chihuahua city, Cholula and Matamoros Izucar in Puebla, Jalapa, Cordova, Mexico city, Oaxaca (*Höge*), Chilpancingo, Omilteme, and Xucumanatlan in Guerrero (*H. H. Smith*), Puebla, Atlixco, Guanajuato, Cuernavaca, Orizaba, Oaxaca, Capulalpam, Juquila (*Sallé*), Tenango del Valle (*Richardson*); Guatemala, near the city (*Salvin*), Dueñas (*Champion*); Costa Rica, Caché, San Francisco, Rio Sucio, Volcan de Irazu (*Rogers*); Panama, Bugaba, Volcan de Chiriqui (*Champion*).

This abundant and very variable species may be easily recognized by its oblong and not expanded form, and by the number and position of the eight black spots on each elytron—three basal, one on the callus and two not in line with it and near the

suture, three nearly in a straight fasciate line near the middle, and two subapical, these latter sometimes united and forming an arcuate spot, this constituting the var. *varipes*, Muls. This variety is not uncommon; I have seen it from Cordova, Oaxaca, Capulalpam, the city of Mexico, Chilpancingo, and the Hacienda de Bleados. The variety named *E. corrupta* by Mulsant, and of which the type from Chevrolat's collection is before me, is simply a very dark form of this insect with the black spots represented by denuded spaces, rendering them more distinct than they would otherwise be; it is scarcely different from the var. *murina*, in which the spot nearest the suture of the apical pair is not apparent in the type. An example from Parada in Sallé's collection wholly agrees with the form *murina*, and is labelled "*plumbea*, Deyr." The soft pubescence in examples of this type is just like that of *E. olivacea* and of *E. obscurella*, Muls., and it appears probable to me that the latter is only the extreme form, in which the denuded spots have quite disappeared. We have received a small series from Oaxaca (*Höge*) which appear to be referable to *E. murina* or *E. corrupta*; but they are decidedly shorter, and have, consequently, the two subapical spots in a straight fascia, instead of being obliquely placed. The species disappears towards the Isthmus of Panama; the only two specimens obtained there by Mr. Champion are of the yellow form, in one of which the basal row of spots is gone, in the other they re almost obsolete. *E. simillima*, Crotch, from Bogota, is, I think, rather a form of *E. borealis* than, as he thought, of this insect.

Dr. Palmer has sent the larva (fig. 20) and pupa of a pallid variety of *E. varivestis* from Mexico city. The larva is clothed with branched and variegated black-and-white spines. The pupa retains the larval skin, only partially cast, on its hind body. There is a record of *E. corrupta* from New Mexico [*cf.* 'Insect Life,' ii. pp. 113, 114 (1889)]. We figure a typical example from Oaxaca (fig. 17); the var. *varipes*, Muls., from Cordova (fig. 18); and a pale variety (fig. 19) and its larva (fig. 20) from Mexico city.

15. **Epilachna obscurella.**

Epilachna obscurella, Muls. Spec. Col. Trim. sécur. p. 809[1].

Hab. Mexico[1] (*Sallé*), near the city (*Höge*).

The smaller size, more oblong shape, and black legs and trophi seem to be sufficient to give this form specific rank. The elytral margins, moreover, are hardly expanded. It is, however, very difficult to distinguish this from nearly black forms of *E. varivestis*. Crotch (Rev. Coccin. p. 62) treats *E. obscurella* as a variety of *E. olivacea*.

16. **Epilachna vulnerata.** (Tab. XIII. fig. 21.)

Late ovata, suborbicularis, nigra, nitida, brevissime pubescens; elytris fasciis duabus nec marginem nec suturam attingentibus, maculaque magna subrotundata subapicali sanguineis haud bene discretis, ore, antennis, palpis, geniculis, tibiis tarsisque rufis. Long. 8 millim.

Hab. Mexico (*Sallé; mus. Crotch*).

We have a specimen of this insect from Sallé's collection, and there is another in the Cambridge collection which Crotch placed with *E. aubæi*, and is apparently one of the examples he alludes to under that species, when he says "in mature specimens the elytra have a dark central fascia." The insect before us is, however, broader and differently coloured, and does not look at all like a variety of *E. aubæi*. The elytra have their margins very narrowly reflexed; they are nearly as broad as long, clothed with a very fine downy pubescence; the basal fascia occupies the callus, and thins off and becomes indistinct towards the scutellum; the central fascia is only very narrowly interrupted at the suture. The underside, coxæ, and femora are black, the tips of the latter, the tibiæ, and tarsi being orange-red.

17. **Epilachna aubæi.**

Epilachna Aubei, Muls. Spec. Col. Trim. sécur. p. 810[1].
Epilachna Aubæi, Crotch, Rev. Coccin. p. 62[2].

Hab. Mexico[1], Chilpancingo 4600 feet, Omilteme 8000 feet and Xautipa, all in Guerrero (*H. H. Smith*), Parada, Yolos, Yolotepec, Juquila (*Sallé*).

18. **Epilachna amplexata.**

Epilachna amplexata, Muls. Spec. Col. Trim. sécur. p. 856[1]; Crotch, Rev. Coccin. p. 62[2].

Hab. Mexico[1 2].

I cannot identify any examples I have seen with this species. Although the type would seem to have passed into Crotch's collection, it is not to be found there, nor does the name stand there now. He remarks of it, "Very close to *E. aubæi*, but differs by having the coarse punctures apparent."

19. **Epilachna vanpatteni.** (Tab. XIII. fig. 22.)

Breviter ovata, valde convexa, nitida, parum pubescens, castaneo-rufa; prothorace macula transversa; elytris singulis punctis tribus basalibus (suturali communi), fascia nec marginem nec suturam attingente, punctis tribus post medianis (suturali communi), et punctis tribus subapicalibus in triangulum dispositis, corpore infra pedibusque nigris. Long. 6 millim.

Hab. Costa Rica (*Van Patten*).

Var. Prothorace, pedibus et corpore concoloribus immaculatis, elytrorum signatura ægre discreta.

Hab. Guatemala, Volcan de Atitlan (*Champion*).

The single example from Costa Rica cannot be assigned to any species known to me, and is well and definitely marked. The specimen from the Volcan de Atitlan is more pubescent, and has all the marks cloudy and ill-defined; it might have been mistaken for *E. borealis*, but the fascia following the three basal spots, and the three subapical spots following the three postmedian ones, differentiate *E. vanpatteni* from that species. We figure the type from Costa Rica.

20. **Epilachna modesta.** (Tab. XIII. fig. 23.)

Epilachna modesta, Muls. Spec. Col. Trim. sécur. p. 817 [1]; Crotch, Rev. Coccin. p. 63 [2].
Epilachna difficilis, Muls. Spec. Col. Trim. sécur. p. 818 [3].

Hab. Mexico [1 2 3], Cuernavaca in Morelos, Toxpam, Orizaba (*Sallé*), Jalapa, Oaxaca (*Höge*); Guatemala, La Tinta and San Gerónimo in Vera Paz, Capetillo (*Champion*).

A specimen from Oaxaca is figured.

21. **Epilachna patula.** (Tab. XIII. fig. 26.)

Epilachna patula, Muls. Spec. Col. Trim. sécur. p. 796 [1]; Crotch, Rev. Coccin. p. 62 [2].

Hab. Mexico [1 2], San Andres Tuxtla (*Sallé*), Las Vigas (*Höge*).

A small series has been received from Höge of this very distinct and pretty species.

22. **Epilachna polluta.** (Tab. III. fig. 24.)

Epilachna polluta, Muls. Spec. Col. Trim. sécur. p. 870 [1]; Crotch, Rev. Coccin. p. 63 [2].

Hab. Mexico [1 2], Cuernavaca in Morelos (*Sallé*), Amula in Guerrero 6000 feet (*H. H. Smith*), Tacambaro in Michoacan (*Höge*).

An obscurely marked, very convex species. We figure a fully-coloured example from Amula; very frequently the markings are clouded and obscure, or almost absent.

23. **Epilachna mitis.** (Tab. XIII. fig. 25.)

Epilachna mitis, Muls. Spec. Col. Trim. sécur. p. 853 [1]; Crotch, Rev. Coccin. p. 66 [2].

Hab. Mexico [1 2], Cuernavaca, Toxpam (*Sallé*), Oaxaca (*Höge*), Teapa in Tabasco (*H. H. Smith*); Guatemala, San Gerónimo, San Joaquin, Chiacam, Cubilguitz, San Juan, and La Tinta, all in Vera Paz (*Champion*).

Subject to a good deal of variation, both in size and colour. The examples from Oaxaca agree precisely with the type, which is before me (mus. Crotch, Cambridge, ex Chevrolat). These have a heavy pubescence, a completed dark submarginal zone, and the suture dark, but shining in the middle, and are very similar to *Ladoria delphinæ*. Most of the examples from Vera Paz are smaller and darker, with the thorax dark on the disk, the zone often interrupted near the apex, &c. The South-American *E. circumflua*, Muls., scarcely differs from this, and is regarded by Crotch as synonymous with *E. contempta*, Muls., from Buenos Ayres. We have received a large series of examples. A specimen from Toxpam is figured.

24. **Epilachna inepta.**

Orbiculis, parum convexa, pubescens, sordide ochracea; prothorace elytrorumque lateribus dilutioribus, his zonula submarginali pone medium abbreviata punctoque discoidali, illo punctis duobus basalibus haud bene discretis fuscis. Long. 4·5–5 millim.

Hab. Mexico, Presidio (*Forrer*), Playa Vicente (*Sallé*).

The sordid yellow colour and ill-defined black markings of the three examples before me may be due to their slight immaturity, and the certainly deep and broken style of punctuation in the two from Presidio is perhaps partly due to the same cause; the black dot on the disk of the elytra is, however, a distinctive character, which prevents my referring this insect to *E. circumflua* (a South-American species) or any of its close allies. It is, of course, possibly a form of *E. mitis*, and can at present only be regarded as a tentative species. It seems probable, however, that there are many closely allied, small, zonate species of *Epilachna*.

25. **Epilachna virgata.**

Epilachna virgata, Muls. Spec. Col. Trim. sécur. p. 855 [1]; Crotch, Rev. Coccin. p. 67 [2].

Hab. GUATEMALA, Dueñas (*Champion*); PANAMA, Bugaba, David, Volcan de Chiriqui 2000 to 3000 feet, Caldera (*Champion*).—SOUTH AMERICA, Colombia [1], Venezuela [2], Andes above 9000 feet [2].

The elytra have two dark stripes, besides the zone near the margin, and, as Crotch remarks [2], "the striped appearance due to the arrangement of the pubescence is very characteristic." Some examples from the Volcan de Chiriqui are very dark and suffused, so that the vittæ and zone are not conspicuous. Fifteen examples were sent by Mr. Champion.

SUPPLEMENT.

The following notes and descriptions refer to insects which have been sent us during the publication of this volume; in a few cases to others which had been reserved for further examination as being of doubtful location.

ACROPTEROXYS (p. 13).

Acropteroxys caudata (p. 13).

To the Mexican locality given, add :—Chilpancingo in Guerrero (*H. H. Smith*).

3. **Acropteroxys acuminatus.**

Niger, capite prothoraceque parce punctatis, hoc oblongo, lateribus distincte marginatis; elytris apicem versus acuminatis, apicibus divaricatis, leviter striato-punctatis, interstitiis punctulatis; antennarum clava sex-articula. Long. 7·5–8 millim.

Hab. Mexico, Chilpancingo and Omilteme in Guerrero, 4600 to 8000 feet (*H. H. Smith*).

Head, thorax, and antennæ black, the head and thorax deeply and rather sparsely punctured. The antennæ have the first four joints short, and scarcely longer than wide; the fifth joint is a little widened; the sixth to the eleventh form a long and lax club. The prosternum is transversely wrinkled, and impressed with scattered coarse punctures, its process widened towards the tip and much depressed. The metasternum is smooth, with a few dispersed small punctures. The prothorax is oblong, but not so long as in *A. gracilis*; its sides are sinuate, and its front angles more depressed than in that species, and it hence appears more cylindrical. The elytra are a little tumid near the base, and taper from thence to the apex, where they are slightly divaricating; they are also minutely denticulate, but the denticulation is only visible under a very strong lens.

This insect, of which only two specimens were obtained by Mr. Smith, diverges a little from the type of the genus in which I place it, inasmuch as the antennæ have the last six joints nearly equally wide and the fifth joint also widened a little, so that the club is very gradually formed. In the punctuation and colour it is very like *Ortholanguria elongata*, but the general shape is more acuminate.

DASYDACTYLUS (p. 14).

Dasydactylus buprestoides (p. 15).

To the locality given, add :—GUATEMALA, Coban in Vera Paz (*Conradt*).

2 (A). **Dasydactylus æneopiceus.**

Æneo-piceus, elytris viridi-nitentibus, antennis tarsisque nigrescentibus; capite prothoraceque fere glabris, hoc subquadrato, feminæ minute punctulato; elytris obsoletius punctato-striatis, interstitiis postice punctatis. Long. 11–13 millim. ♂ ♀.

Mas, prothorace convexiore, lateribus antice magis rotundatis, tarsis anticis dilatatis fulvo-hirtulis.

Hab. MEXICO, Teapa in Tabasco (*H. H. Smith*).

This species is very closely allied to *D. subulatus*. It differs principally in the pitchy-red colour of the head and thorax, and in the latter being shorter and relatively broader in both sexes than in that insect; the elytra are at the same time broader and less subulate. *D. æneopiceus* is also clearly allied to *D. glabricollis*, but appears to be a more robust insect and is differently coloured.

Dasydactylus picipes (p. 22).

To the localities given, add :—MEXICO, Teapa in Tabasco (*H. H. Smith*).

Dasydactylus sellatus (p. 23).

To the Mexican localities given, add :—Temax in N. Yucatan (*Gaumer*).

Among many examples of this species sent from Teapa by Mr. H. H. Smith (whence I have already recorded it) are several of the variety with the head black.

CROTCHIA (p. 28).

Crotchia parvula (p. 32).

To the localities given, add :—MEXICO, Teapa in Tabasco (*H. H. Smith*).

THALLISELLA (to follow the genus *Crotchia*, p. 32).

Thallisella, Crotch, Cist. Ent. i. p. 402 (1876).

This genus, of which the type is *T. peruviana*, Crotch, is clearly a member of the Erotylidæ and has undoubted affinity with certain members of the Languriidæ. It is well and sufficiently characterized by Crotch, with the exception of the male characters observable in the Central-American species; but with singular inconsistency he has included in it a second species from a wholly different part of the world—*T. malasiæ*, which is not congeneric. This latter is, in fact, a member of the genus which has subsequently been described by Mr. Fowler under the name *Paracladoxena*.

The *Thallisellæ* are small Triplacid-looking beetles, with coarsely granulated, prominent eyes; very broad tarsi, with spongiose soles, apparently four-jointed, but

really five-jointed, the claw-joint having the basal node; distinct metasternal and abdominal lines or carinæ; and stout antennæ, with a three-jointed club. The elytra are faintly striated below the shoulders.

We have two species to record from Central America.

The toothed intermediate femora in the male of *T. crotchi* are very remarkable, and the three ventral segments having each a pilose dot in the same sex are quite analogous to the character figured for *Crotchia proxima* (*cf.* Tab. I. fig. 24 *a*). I cannot say whether these characters exist in the male of *T. peruviana*, Crotch.

1. Thallisella crotchi.

Oblonga, parum ovata, ferruginea, nitida; thorace transverso-quadrato, parce punctulato, basi bifoveolato; elytris punctato-striatis; antennarum articulis quatuor ultimis clavam formantibus, nigris.

Mas, femoribus intermediis late dentatis, abdominis segmentis secundo, tertio et quarto, puncto piloso. Long. $4\frac{1}{2}$ millim.

Hab. BRITISH HONDURAS, Belize (*Blancaneaux*); PANAMA, Bugaba, Volcan de Chiriqui (*Champion*).

This species is deep rusty-red in colour, with the punctures in the striæ fuscous, but only faintly so beneath the surface; the striæ are about eight in number, but towards the side become short and confused; the marginal stria is deep and sinuous, and the margin much inflexed. The thorax is transverse, but not twice as wide as long; the front angles are deflexed and acute, and the hinder angles also rather acute, the sides being slightly sinuate; upon the disc there is an irregular and indistinct **M**-like fuscous mark. These fuscous markings, as well as those in the striæ, are not always present. The underside is smooth and shining, with a few scattered punctures upon the metasternum. The prosternal process is raised at the sides, and has a rather obsolete carina in the middle.

Three examples from the Volcan de Chiriqui, which appear to be females, have the apical joint of their antennæ red, and the elytra rather more infuscate in the middle than in the Bugaba specimens, with the base, shoulders, and apex lighter ferruginous-red.

2. Thallisella conradti.

Oblongo-elongata, nigra, nitida; antennis, pedibus elytrisque ad apicem picescentibus; capite crebre fortiter punctato, fronte late subbiimpressa; antennis capitis thoracisque longitudine, articulis secundo ad octavum subæqualibus, gradatim brevioribus, haud elongatis, clava haud abrupta; prothorace transverso-quadrato, crebre ac distincte punctulato, basi profunde bifoveolato; elytris sat profunde striato-punctatis, interstitiis planis, glabris. Long. $4\frac{1}{2}$–5 millim.

Hab. GUATEMALA, Coban in Vera Paz (*Conradt*).

If this insect had come from the eastern hemisphere, I should have unhesitatingly placed it in the genus *Thallis*. The five-jointed tarsi (the claw-joint having a distinct but small node at its base) will easily prevent its being confused with any species of

Hapalips, no less than the total absence of pubescence and the presence of basal sulci on the thorax; the latter are very short, but deeply impressed, and connected by a transverse impression, the sides and base of the thorax being margined. The thorax is one-fourth wider than long, rather sparsely but distinctly punctured, the width in front scarcely less than at the base, but the front angles are a little deflexed. The elytra are very distinctly punctate-striate, there being about eight striæ on each, that nearest the suture at the base being punctured for a short distance only, and then merging in the unpunctured sutural stria; near the apex all the striæ become obsolete. The scutellum is transverse. The legs are pitchy; the tibiæ are simple, a little widened at the tip in the front pair. The eyes are more coarsely faceted than in *Hapalips*.

Two examples.

HAPALIPS (to follow the genus *Thallisella*).

Hapalips, Reitter, Verh. Ver. Brünn, xv. Abhandl. p. 122 (1877).

This genus was formerly placed by its author in the Rhizophagidæ. He has, however, himself noticed the analogy of the tarsal structure with that of *Languria*, and Mons. A. Grouvelle, in rejecting them from the association named, considers them better placed with the Languriides. Their general structure—that of the head, the antennæ, the prosternum, and occasionally visible, though very obsolete, "abdominal lines,"—apart from the form of the tarsi, fully bears out this conclusion.

Reitter enumerated ten species, all with one exception from the Southern continent of America. Specimens of two species have been lately sent by Mr. H. H. Smith from St. Vincent and Grenada, in the West Indies. We here enumerate five, chiefly from Mexico. They are therefore rather widely distributed *.

A. *Interstices of the elytra not punctured.*

1. Hapalips cribricollis.

Oblongus, subparallelus, leviter convexus, nitidus, rufo-piceus, parce pubescens; capite prothoraceque parce fortiter punctatis, elytris fortiter punctato-striatis, fronte obsolete biimpressa; prothorace quadrato, lateribus tenuiter marginatis, ante basin obsolete bifoveato; elytris prothorace paullo latioribus, interstitiis lævibus; antennarum articulis quarto ad octavum subquadratis, clava abrupta; capite, prothorace elytrorumque fascia sat lata, pone medium sita, sæpe saturatioribus. Long. 3·75–4 millim.

Hab. Mexico, Motzorongo in Vera Cruz (*Flohr*), Teapa in Tabasco (*Höge*).

This species appears to me to be rather near *H. gracilicornis*, Reitter, and to differ from it in being more shining, with the head and thorax more sparsely and more deeply punctured. The antennæ are as long as in that insect, but have the intermediate

* Mr. Champion informs me that he sent a large number of specimens of this genus from both Guatemala and Panama: these, unfortunately, cannot now be found.

joints bead-shaped, with the club more abrupt. The front angles of the thorax are subdentate a little below the actual angle, nearly as shown in figure 2 of the plate accompanying Reitter's descriptions. The head is distinctly bifoveolate, but the foveæ are small and not deep. In the majority (five out of eight) of the specimens sent the head and thorax are dark pitchy-red, and the elytra have an ill-defined rather curved fascia, and a very indistinct spot near the scutellum, darker than the ground-colour.

2. **Hapalips filum.**

Hapalips filum, Reitter, Verh. Ver. Brünn, Abhandl. xv. p. 125 [1]; Gorham, P. Z. S. 1898, p. 335 [2].

Hab. MEXICO, Frontera in Tabasco (*Höge*).—COLOMBIA [1]; ANTILLES, Grenada [2].

I refer a single example sent by Höge from Tabasco to this species.

B. *Interstices of the elytra punctured.*

3. **Hapalips reitteri.**

Elongato-oblongus, nitidulus, capite prothoraceque parcius, elytris densius pubescens, fuscus vel obscure ferrugineus; capite inter oculos transversim late biimpresso; antennis capite prothoraceque sesqui brevioribus, articulis quarto ad octavum nodiformibus, clava abrupta; prothorace quadrato, cum capite parcius distincte punctato, lateribus tenuiter reflexo marginatis haud crenulatis, disco æquali, basi obsolete biimpresso; elytris perobsolete punctato-sulcatis, interdum punctato-striatis, interstitiis seriatim confuse punctatis. Long. 5·5–6 millim.

Hab. MEXICO, Jalcomulco in Vera Cruz (*Flohr*), Vera Cruz (*Sallé*).

This species by its large size seems distinct from any yet described, except *H. grandis,* Reitter, from Colombia, from which the punctuation of the interstices of the elytra separates it. The eyes are large and prominent, but the head is narrower by one-quarter than the thorax. The latter is nearly square, not wider than long; the front angles of the reflexed margins are not so far advanced as the front margin, looking as though they were excised below the eyes; its surface is covered with distinct, somewhat stellate, flat-bottomed punctures, which here and there are confluent. The elytra have the rows of punctures irregular, often confluent, while the punctures of the interstices are scarcely smaller, but less confused than those of the striæ; near the scutellum, however, and for some way along the suture, they are quite confused with those of the striæ. The general colour is obscurely ferruginous, the elytra often becoming nearly fuscous with lighter shoulders. The pubescence in this insect (as in the other species here described) is golden and serially arranged. The metasternal and abdominal lines are in the form of very fine raised carinæ and are very short.

I refer seven examples to this species, all of which are from the Sallé collection, with the exception of the one from Jalcomulco.

4. **Hapalips flohri.**

Oblongo-elongatus, nitidulus, parce pubescens, piceus, capite prothoraceque crebre distincte ac profunde punctatis; elytris punctato-striatis, interstitiis evidenter seriatim punctatis; fronte utrinque late obsolete

biimpresea; prothorace oblongo-quadrato, angulis anticis integris, rectis, lateribus et basi tenuiter marginatis, hoc obsolete bifoveolato; antennis brevibus, articulis quarto ad octavum nodiformibus. Long. 6 millim.

Hab. MEXICO, Motzorongo in Vera Cruz (*Flohr*).

Equal in size to *H. reitteri*, but at once separable from it by the more shining, less pubescent surface, the longer thorax, which is a little longer than wide, with the anterior angles in a line with the front margin, and the distinctly punctate-striate elytra; the punctures on the latter are not in irregular rows, although they are very close and in places, especially externally, become confluent. The rows of elongate punctures on the elytral interstices are also more regular and more distinct than they are in *H. reitteri*. The colour is uniformly pitchy.

One specimen only has been received of this insect, and it is possible that the pubescence has been partly rubbed off; but even if this is the case the surface is less alutaceous, and the puncturing is stronger and more regular, than that of *H. reitteri*.

5. **Hapalips parallelus.**

Oblongo-elongatus, parallelus, breviter pubescens, fuscus, infra cum pedibus ferrugineus; capite crebre minute punctato, fronte obsoletius biimpressa; antennis breviusculis, ferrugineis, articulis quarto ad octavum transversis, clava abrupta; prothorace transverso quadrato, parcius haud profunde punctato, basi utrinque subimpresso, lateribus tenuiter marginatis; elytris thorace parum latioribus, lateribus parallelis, obsolete striato-punctatis, interstitiis minute seriatim punctatis. Long. 4 millim.

Hab. MEXICO, Vera Cruz (*Sallé*), Frontera in Tabasco (*Höge*).

Var. Obscure ferrugineus.

Hab. MEXICO, Colima city (*Höge*), Vera Cruz (*Sallé*).

Apparently very near *H. fuscus*, Reitter, from Brazil. The punctures of the interstitial series of the elytra seem to be finer than they are in that insect, to judge from the description, indeed they are so fine as not to be easily seen. The punctures of the striæ are very numerous, oblong, and almost confluent; those of the thorax are stellate and flat-bottomed. The abdominal lines are fine, carinate, extending over two-thirds of the basal segment.

Seven examples.

EUXESTUS (to precede the genus *Megalodacne*, p. 33).

Euxestus, Wollaston, Ann. & Mag. Nat. Hist. (3) ii. p. 411 (1858); Lacordaire, Gen. Col. xii. p. 26; Gorham, P. Z. S. 1898, p. 336.

Euxestus is a genus formed by Wollaston for a very small insect somewhat resembling a small pitchy-coloured *Dacne*, from Madeira. It is apparently rather closely allied to Eastern insects of the genus *Tritomidea*, Motschulsky; but the New World species differs from them in the structure of the antennæ and in other points which I have already noticed elsewhere.

1. **Euxestus piciceps.**

Euxestus piciceps, Gorh. P. Z. S. 1898, p. 336 [1].

Hab. MEXICO, San Juan Bautista in Tabasco (*Höge*); GUATEMALA, Senahu in Vera Paz (*Champion*).—ANTILLES, Grenada [1].

One example only has been seen by me from each of the Central-American localities named, but several were sent from Grenada. It is therefore widely distributed in Tropical America.

MEGALODACNE (p. 33).

Megalodacne audouini (p. 34).

To the Mexican localities given, add :—Temax in N. Yucatan (*Gaumer*).

MEGISCHYRUS (p. 37).

Megischyrus nicaraguæ (p. 37).

To the localities given, add :—PANAMA, Volcan de Chiriqui, Caldera (*Champion*).

MYCOTRETUS (p. 46).

Mycotretus ornatus (p. 47).

To the localities given, add :—GUATEMALA, Coban in Vera Cruz (*Conradt*).

Mycotretus scitulus (p. 49).

To the localities given, add :—GUATEMALA, Coban in Vera Cruz (*Conradt*).

Mycotretus bistrigatus (p. 52).

To the Mexican localities given, add :—Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Mycotretus vittatus (p. 57).

To the localities given, add :—MEXICO, Temax in N. Yucatan (*Gaumer*).

Mycotretus epopterus (p. 69).

Var. prothorace quadripunctato ; elytris nigris, fasciis duabus dentatis, ad suturam interruptis, albidis, posteriore versus apicem arcuata.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

A single example, apparently belonging to this species, but differing as above. The four thoracic spots are equidistant, in a transverse row, and show no tendency to unite, as in the type. The black markings of the elytra are more diffused, so that the two basal spots described in the type are here quite united, and the suture is black between

the scutellum and the broad central black fascia. The breast beneath is pitchy-red. The scutellum in both examples is black.

62 (A). **Mycotretus erraticus.**

Oblongo-ovatus, ater, capite, prothorace, antennarum articulis duobus primis pedibusque saturate rufis; verticis puncto prothoracisque punctis tribus, mediano majore, marginem anticam attingente, nigris; capite prothoraceque creberrime fortiter punctatis, elytris punctato-striatis. Long. $4\frac{1}{2}$ millim.

Hab. MEXICO, Chilpancingo in Guerrero 4600 feet (*H. H. Smith*).

Antennæ rather long, and the club lax for this genus. Thorax with the sides nearly straight, only a little contracted to the front angles, transverse; front scarcely excised, the angles acute, the base sinuate. Elytra and scutellum black, the former deeply punctate-striate, with the interstices not quite smooth. The legs are blackish in one example, but the tarsi even in this are red. The meso- and metasterna and the abdomen are black, and are strongly punctured, the latter being smoother in the middle.

Two examples.

LYBAS (p. 75).

Lybas granatus (p. 75).

To the Mexican localities given, add :—Teapa in Tabasco (*H. H. Smith*).

CYCLOMORPHUS (to follow the genus *Coccimorphus*, p. 84).

Cyclomorphus, Hope, Rev. Zool. 1841, p. 114; Lacordaire, Monogr. Erotyl. p. 258 (1842); Chapuis, Gén. Col. xii. p. 53 (1876); Crotch, Cist. Ent. i. p. 483.

A genus of about twenty species, all hitherto described being from the southern continent. It has very much the form of *Ægithus*, but is distinguished from that genus by the coarsely granulated eyes, as well as by the outline not being so uniform, the thorax having its sides more rounded and its base more rectangular than is usual in *Ægithus*.

1. **Cyclomorphus sordidus.**

Valde convexus, gibbosus, fere glaber, sordide luteus, subtus piceo-variegatus; ore, antennis, palpis pedibusque nigris, femoribus infra luteo-pictis; elytris nigro-piceis, sutura marginibusque indistincte luteis. Long. 9 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*).

Broadly ovate, the apex of the elytra very declivous and pointed; impunctate, but with a fine alutaceous sculpture, which renders the surface not very brilliant, though shining. Head and thorax luteous; the mouth, antennæ and palpi, and the extreme margins of the thorax, are black. Thorax with the base more than twice as wide as the length, the front not deeply excavated. The antennæ are rather longer than the head and thorax together. The scutellum is black. The elytra are smooth, but not

very shining nor so clearly alutaceous as is the thorax; the suture and margins are bordered by a very fine impressed line close to their edge, the former is depressed, and the latter are not at all expanded. The under surface is impunctate, and there are no coxal lines. The prosternum is simple, *i. e.* not carinate nor elevated in front.

The discovery of a species of *Cyclomorphus* so far north, and at such an elevation, is interesting, as the genus has not, so far as I am aware, been recorded previously from the northern continent.

ÆGITHUS (p. 85).

Ægithus uva (p. 88).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*).

One small example, apparently referable to this species.

PLASTOCOCCUS (to follow the genus *Ægithus*, p. 92).

Corpus suborbiculare, gibboso-convexum, coccinelliforme. Pronotum perbreve, valde arcuatum; prosternum æquale, haud carinatum; metasternum lineis coxalibus integris elevatis. Elytrorum marginibus modice explanatis, epipleuris declivis. Caput in prothorace receptum, oculis leviter granulatis; antennæ breves, clava laxe formata quadriarticulata, haud multo incrassata; palpi labiales articulo ultimo valde securiformi.

The above name is proposed for a very Coccinellid-looking species of Erotylidæ, which with no very decided characters is yet not to be associated with any described genus. It is perhaps most nearly allied to *Coccimorphus* and *Ægithus*.

1. **Plastococcus atricinctus.**

Rufo-ferrugineus, supra sanguineus, capite, prothorace (basi excepta) elytrorumque marginibus late, ad apicem latiore, nigris; elytris vage seriatim punctatis, interstitiis disperse punctulatis. Long. $3\frac{3}{4}$–4 millim.

Hab. PANAMA, Bugaba, David, Volcan de Chiriqui 4000–5000 feet (*Champion*).

The disc of the elytra, the scutellum, and the extreme base of the thorax are blood-red; the head and rest of the thorax are black and smooth; the thorax is short and arcuate, formed exactly as in *Chilocorus*. The antennæ are shorter than the head and thorax together; they are obscurely yellow, with a blackish club. The palpi externally are dark. The front and sides of the thorax are margined by a very fine line; the base is not margined. The elytra are oval and slightly cordate, smooth and shining, with seven or eight series of distinct punctures, and with confused punctures on the sides and at the apex. The underside and legs are entirely rich tawny-ferruginous, and the true epipleural fold of the elytra is of the same colour, the strongly inclined outer margin being black. The whole form of this insect, and its colour, is so remarkably like that of a *Chilocorus* that, but for the stouter and apparently four-jointed tarsi, the somewhat stouter antennæ, the absence of abdominal coxal fossettes, and the serially punctate elytra, it might readily be taken for a member of that genus.

A considerable series of specimens was obtained by Mr. Champion.

2. **Plastococcus apicalis.**

Sanguineo-rufus, capitis basi prothoraceque (basi et lateribus exceptis) indeterminate nigris; elytris singulis macula subapicali nigris, vix punctulatis. Long. 5 millim.

Hab. PANAMA, San Feliz in Chiriqui (*Champion*).

Larger than *P. atricinctus*. The mouth, antennæ, palpi, and the base and sides of the thorax are yellowish-red, but in a vague way, and are evidently variable in the degree to which this colour extends. The elytra are more obsoletely punctulate (in one example nearly smooth); they are entirely blood-red, except the two spots near, but not quite reaching, the apex, which together form an arcuate mark nearly disjoined at the suture.

P. apicalis is evidently very nearly allied to, and perhaps only a local variety of, *P. atricinctus*.

Three specimens.

BRACHYSPHENUS (p. 92).

24 (A). **Brachysphenus** —— sp.?

Hab. GUATEMALA, Coban in Vera Paz (*Conradt*).

A single specimen of a *Brachysphenus* unknown to me. Fulvous-yellow; the elytra black, with the epipleuræ, two basal spots (somewhat obliquely placed), and the apex —enclosing a black spot on each elytron, these spots being united along the suture and margin with an interrupted fascia,—whitish-yellow. Elytra very obsoletely gemellate-striate. Antennæ, knees, tibiæ, and tarsi black.

CYPHEROTYLUS (p. 103).

Cypherotylus alutaceus (p. 107).

To the Mexican locality given, add:—Amula, Omilteme, and Xucumanatlan in Guerrero, 6000 to 8000 feet (*H. H. Smith*), Mochitlan in Guerrero (*Baron*).

Sent in abundance from Guerrero.

BRACHYLON (to follow the genus *Homœotelus*, p. 114).

Corpus breve, oblongum, nitidum, glabrum; elytra parce, haud profunde punctato-striata; prothorax validus, basi bisinuata vix marginata, lateribus tenuissime marginatis; caput receptum. Antennæ validæ, decem-articulatæ; clava capitulata, pubescente, triarticulata, articulis connatis ægre distinctis. Pedes breves; femoribus tibiisque compressis, haud multo dilatatis; tarsis quadriarticulatis (?), tenuibus; unguibus simplicibus, articulo quarto longo.

The above is the formula (so far as I have examined the two specimens) for a very small beetle of doubtful location, at first sight resembling a small *Cercyon*, but apparently allied to *Dacne*, and perhaps to *Xestus* of Wollaston; but differing in the

capitulate club of the antennæ. We frequently meet with small Coleoptera, both in the Erotylidæ and in the Endomychidæ, with the tarsi apparently four-jointed and very simple, *i. e.* neither expanded nor with bilobed joints. That these insects are of doubtful location in the Clavicorn series is obvious, when it is considered that the relation of many genera with such families as the Cryptophagidæ and with genera such as *Ephistemus* is not well ascertained.

1. **Brachylon breve.**

Oblongo-ovatum, nigro-piceum, nitidum; antennis pedibusque flavis; elytris singulis seriebus quinque punctorum, postice obliteratis. Long. vix 2 millim.

Hab. MEXICO, Omilteme in Guerrero 8000 feet (*H. H. Smith*); NICARAGUA, Chontales (*Janson*).

Broadly-oval, pitchy-black, the head, thorax, and the base and margins of the elytra being of a pitchy-red, almost blood-red colour; the antennæ, palpi, and legs are chestnut-yellow. The whole insect is smooth and shining, without pubescence, and impunctate (saving about seven series of rather sparsely disposed punctures on the elytra, which terminate at about one-third from the apex). The head is small, received, but not deeply, into the thorax, and when turned downwards forming a uniform outline with its front. The antennæ are short, with a capitulate club, apparently consisting of three closely soldered joints. The eyes are small and very slightly prominent. The palpi are very little developed, and cannot easily be observed; they are light yellow, and appear to have a small securiform apical joint. The thorax (with the head) is quite smooth; its sides are very finely margined; the front angles are depressed, so that the small opening for the head is not much cut out, but would appear semicircular viewed from the front. The elytra are of the same width as the thorax at the base, and closely fitted to its bisinuate hind margin; they are smooth. with the exception of the punctate striæ. In some examples the whole insect is nearly black, with yellow legs and trophi.

Five examples, all apparently referable to one species.

PHALANTHA (p. 118).

Phalantha intricata (p. 119).

To the localities given, add:—MEXICO, Teapa in Tabasco (*H. H. Smith*), Frontera in Tabasco (*Flohr*).

TROCHOIDEUS (to follow the genus *Micropsephus*, p. 150).

Trochoideus, Westwood, Trans. Linn. Soc. xvi. p. 675 (1833); Gerstaecker, Monogr. Endom. p. 381.

Trochoideus is placed by Gerstaecker at the commencement of his fourth group of

the Endomychidæ, but it must be admitted it has less claim than the other genera to a place there. The tarsi are simply four-jointed, but the remarkable insects which compose this genus have neither the general appearance nor structure of the family. They present rather the suggestion of an abnormal form of Cryptophagidæ, and have a certain relationship to the European genus *Pleganophorus*, now usually placed among the Colydiidæ.

The distribution of the five species recorded is no less remarkable: one from Madagascar; one widely spread in the East (Burma, the Philippine Is., Java, the Nicobar Is., &c.); one from Burma; one obtained from gum-copal; and one from Tropical America.

1. **Trochoideus americanus.**

Trochoideus americanus, Buquet, Rev. Zool. 1840, p. 174[1]; Westw. Trans. Linn. Soc. xix. p. 45[2].
Trochoideus goudotii, Guer. Rev. et Mag. Zool. 1857, p. 191 (♀)[3].

Hab. Panama, Volcan de Chiriqui 2000–4000 feet (*Champion*).—Colombia, San Antonio near Bogota [1 2], Tolima [3].

Of this curious insect a male and two female examples were found by Mr. Champion in Chiriqui. The females have one more joint in the funicular portion of the antennæ than the male, and the apical joint is much less massive and more pubescent. The colour in our examples is uniformly fulvous. The insect appears to be found under the bark of decaying trees.

CRYPTOGNATHA (p. 181).

Cryptognatha auriculata (p. 182).

To the localities given, add:—Guatemala, Panzos and San Gerónimo in Vera Paz (*Champion*); Panama, Bugaba, David, Caldera, Volcan de Chiriqui (*Champion*).

About a dozen specimens from Panama are, I think, to be referred to this species. They are nearly unicolorous, the head and front angles of the thorax being paler in some specimens, which may be the males, and the legs are paler yellow than the upper surface. The elytra have the juxta-sutural row of subcutaneous fuscous dots often present, and continued parallel to the base; the punctures are very faintly and obsoletely serial near the margin, in an extremely shallow sulcus. The front tibiæ, in what I suppose to be the male, have their outer edge compressed, so as to appear to have a membranous projection, widest near their base, and the middle and hind tibiæ are emarginate on their outer sides. Single examples from Teapa and Panzos respectively are evidently males, and have the head wide and concave, and the thorax with the front margin as well as the sides white.

Mr. H. H. Smith has met with the species at Teapa, whence I have already recorded it.

1 (A). **Cryptognatha annulata.**

Corpus cum pedibus luteum, capitis basi prothoraceque nigris, hoc angulis anticis, illo fronte luteis; elytris sanguineis, annulo submarginali lato nigro, margine apicali ipso sanguineo; capite subtiliter, prothorace elytrisque crebre distincte ac minute, punctatis. Long. 2·75 millim.

Mas? capite (basi excepta) luteo.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Orbiculate, and nearly hemispherical, very shining; the body beneath, the head (excepting at the base), the deflexed angles of the thorax, and the legs yellow. The tibiæ are obliquely cut off for the reception of the tarsi, and are not toothed or angular, and scarcely project at the angle formed by the truncation externally. The mouth is yellow, the trophi very short (not observed). The thorax is very distinctly and thickly punctured, black, with a brassy tint, its base with a fine marginal line; the angles in one example very narrowly blood-red, in the other (perhaps the male) widely luteous. In this last-mentioned example the head is luteous, and the base has the black part as a double spot, whereas in the other example (the possible female) it is blood-red, with the basal half black. The elytra are convex, distinctly punctured; the disc is of a fine deep chestnut or blood-red, this colour reaching the base; from the basal angles runs a broad black band along the margin, but leaving it at halfway, the two bands joined at the suture, and leaving the apical margin red. There is in the female (?) example a row of subcutaneous fuscous-black dots parallel to the suture, but the true punctuation is nowhere serial; it is also very evenly distributed, being a little closer near the apex of the elytra.

Two examples.

1 (B). **Cryptognatha amicta.**

Corpus cum pedibus caputque (prothoracis margine antico et lateribus late concoloribus) albido-flava; elytris sanguineis, annulo lato marginali per prothoracis basin provecto nigro, margine apicali tenuiter sanguineo. ♂. Long. 2·75 millim.

Hab. PANAMA, Bugaba (*Champion*).

Very similar to *C. annulata*, but more widely orbiculate; the thorax wider and its sides more uniformly in outline with the elytra, forming an almost perfect circle. The punctuation (especially that of the thorax) is much finer. The head is whitish-yellow, hollowed out in front, wide, the outer angles of the clypeus turning outwards. The thorax has the front margin and sides widely whitish, the black portion of the base not reaching nearer than a quarter of its width from the hind angles, and therefore, though completing the black ring, not being as wide nor quite continuous with it. The scutellum is red, whereas in *C. annulata* it is black. The front tibiæ are outwardly widened and compressed, especially near their base.

Two specimens, both males.

1 (c). **Cryptognatha terminata.**

Corpus cum pedibus ferrugineum, capite prothoraceque nigris, ore piceo; elytris sanguineis, apice nigris. Long. vix 2 millim.

Hab. PANAMA, Volcan de Chiriqui, Caldera (*Champion*).

This species has the punctuation fine and close, but quite distinct, becoming subseriate under the callus, where it is also coarser; the whole form is rather oblong than orbiculate, and it is as usual very convex and shining. One of the two examples has the mouth rather more pitchy than in the other, and also the extreme edge of the middle of the front margin of the thorax pitchy; but I think both are females, and I should expect the male to have a red head. The thorax is entirely black, excepting as mentioned; its base is very finely margined. The scutellum appears to be black, but becomes at least pitchy in one specimen. The black apex of the elytra is almost divided by the red being produced along the suture.

Two examples.

1 (d). **Cryptognatha melanodera.**

Lutea, prothorace nigro; capite prothoracisque angulis anticis rufo-piceis; elytris castaneis, crebre, leviter, obsolete punctatis. Long. vix 2 millim.

Hab. GUATEMALA, Senahu in Vera Paz (*Champion*).

This little species is smaller than *C. terminata*, but is very like it. It differs, however, in having the apex of the elytra black. The scutellum is yellow. The suture itself appears a little darker than the elytra, which are otherwise of a bright chestnut-yellow.

A single specimen, probably a female.

1 (e). **Cryptognatha erythrodera.**

Corpus cum pedibus rufo-piceum, metasterno nigricante; capite prothoraceque læte rufis, elytris et scutello nigris. Long. 1·5 millim. ♂.

Hab. PANAMA, David (*Champion*).

This insect must not be confused with *Scymnus volgus*, which, apart from the generic characters and lack of pubescence, it greatly resembles.

A single specimen.

1 (f). **Cryptognatha ocularis.**

Corpus cum pedibus læte castaneum, capite rufulo; prothorace elytrisque nigris, his macula rotundata in singulis magna sanguinea, illo lateribus indeterminate rufis, elytrorum margine tenui rufo, epipleuris flavis. Long. 1·5–2 millim.

Hab. GUATEMALA, San Gerónimo and Tocoy in Vera Paz (*Champion*).

Var. Elytrorum disco conjunctim late rufo, capite prothoracisque lateribus albido-flavis. ♂.

Hab. GUATEMALA, San Joaquin in Vera Paz (*Champion*).

This insect is widely orbiculate in form and very convex, and has the punctuation very fine. The head in the example from San Joaquin is whitish, rather concave, and with the outer angles of the clypeus sharp and projecting, indicating the male sex. One of the other two specimens, that from San Gerónimo, has the head dark red, and it is probably a female, the tibiæ in this example being feebly developed. One specimen from each locality.

Obs.—This insect is allied to a species of *Cryptognatha* (*C. amabilis*, Gorh.) from Brazil, of which a description is given below *.

1 (G). **Cryptognatha pectoralis.**

Lutea, prosterno medio, mesosterno, metasterno abdominisque processu intercoxali nigris. Long. 1·5 millim.

Hab. GUATEMALA, San Gerónimo, Panzos, San Juan and Tamahu in Vera Paz, Capetillo (*Champion*).

The general colour of this rather obscure insect is luteous-yellow, but the head and thorax are often whitish, yet with darker shades which sometimes appear as three spots on the thorax. The whole breast is black, but the legs, including the coxæ and trochanters, are entirely pale yellow. The punctuation of the head and thorax is very fine, scarcely visible under a Coddington-lens; that of the elytra is fine, but more distinct.

The examples from San Juan, Tamahu, and Capetillo have the breast concolorous or very slightly darkened, but without knowing more of the habits of the living insect

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* **Cryptognatha amabilis.**

Orbicularis, corpus cum pedibus flavum; capite prothoraceque læte aurantiacis, hoc basi indeterminate nigro-fusco; elytris nigris, macula magna discoidali in singulis apiceque late cum margine tenuiter conjunctim rufis, epipleuris flavis. Long. 2 millim.

Hab. BRAZIL, Pernambuco (*coll. Fry*).

This pretty species, easily recognized by its pattern and very orbicular hemispherical form, was given me by Mr. A. Fry.

Cryptognatha castanea.

Orbicularis, corpus saturate brunneum, supra cum pedibus ferrugineum; prothoracis disco et elytrorum sutura nigrescentibus. Long. 1·75 millim.

Hab. BRAZIL, S. Paulo (*coll. Fry*).

Both this species and *C. amabilis* are distinguished by the strongly deflexed basal margins of their elytra and (accordingly) rounded base of the thorax, which viewed from the front is ⊃-shaped, reminding one of a small *Chilocorus*, and by the orbiculate elytra with slightly expanded margins.

I do not feel that it is possible to determine whether more than one species is represented.

The description is taken from specimens from San Gerónimo.

HYPERASPIS (p. 191).

2. **Hyperaspis læta.**

Hyperaspis jocosa, Muls.? anteà, p. 192, t. 11. fig. 2.

The Panama insect described and figured by me under the name *H. jocosa*, Muls., I am now satisfied does not really belong to that species, or to *H. bis-quatuorpustulata*, Muls., and I now propose the name *H. læta* for it.

PORIA (p. 207).

6 (A). **Poria stellaris.**

Orbicularis, haud valde convexa, nigra, nitida; elytris ad humeros submetallicis, crebre irregulariter stellato-punctatis; capite, prothorace (basi excepta), abdomine pedibusque pallide testaceis. Long. 5 millim. ♂.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ very short for this genus; head and palpi pale whitish-yellow; thorax smooth and shining, with very fine and thin pubescence, the base black, with two punctiform projections almost detached in the middle, the whole front and sides, including the hind angles, pale yellow, the front angles very little produced. The tibiæ are very clearly excavated externally below the middle for the tarsi to lie back upon, but are rather flattened than grooved. The length of the legs, the irregular but strong punctuation, which is of the stellate or broken kind, and the situation of the epipleural margin, will prevent this insect being taken for a *Ladoria*. One example, apparently a male.

ZENORIA (to precede the genus *Neaporia*, p. 217).

Zenoria, Mulsant, Spec. Col. Trim. sécur. p. 898 (1850); Crotch, Rev. Coccin. p. 277.

Zenoria is a genus consisting of four or five South-American species, with which the insect we place here agrees rather closely; the coxal fossæ do not, however, cover more than half the segment. The tibiæ are all received very deeply into grooves of the femora, so as to be almost concealed, and they are strongly narrowed towards their apices.

1. **Zenoria circumclusa.**

Orbicularis, subcordata, parce breviter pubescens, castanea vel sanguinea, subtiliter creberrime punctata; prothoracis macula basali cum zonula elytrorum lata fere in medium disci, ad apicem exeunte, annulum præbente. Long. 4 millim.

Hab. PANAMA, Volcan de Chiriqui, David (*Champion*).

This species is very like some of the small zonate *Epilachnæ*, especially *E. circumducta*; but it will hardly be confused with any of these, if the compressed femora, with the flat tibiæ fitting into grooves in them, the very short tarsi, and the deflexed vertical head, with the mouth hidden below, are noticed. The black zone, with the black base of the thorax, forms a nearly complete ring, but runs out to a point at the suture; it is further removed from the margin than in the *Epilachnæ* most like it, and in this respect the present species resembles *Z. revestita*, according to two specimens in Crotch's collection, but it does not appear that these agree with Mulsant's description, in which no mention is made of a pale disc of the elytra.

The brevity of the coxal fossæ might seem to remove this insect from the genus; but the fact is that it is allied to *Z. subcostalis*, and I do not see any reason why *Z. revestita* should be taken as the type of the genus.

CINACHYRA (to follow the genus *Neaporia*, p. 224).

Caput latum, in prothorace bene receptum, oculis magnis. Prothorax æqualis, opacus, angulis anticis subacutis, margine antico pone oculos sinuato. Elytra breviter oblongo-ovata, apice late rotundato, creberrime longitudinaliter rugosa. Tibiæ simplices, tarsi validi, tibiarum dimidium longitudine superantes.

The very curious insect for which we are obliged to propose a new generic name is at present only doubtfully associated with the Ortaliides, chiefly on account of its wide head and vertically ovate eyes.

The rugose sculpture of the elytra and of the breast and the style of coloration are quite unusual in the Coccinellidæ.

1. Cinachyra picta.

Nigra, opaca, capite prothoraceque subtilissime punctatis, elytris creberrime rugosis, quasi alutaceis, epistomatis punctis duobus; prothoracis angulis anticis tenuissime marginatis, et punctis duobus minutis; elytrorum macula discoidali utrinque hamata punctisque nonnullis perminutis, duobus basalibus, duobus apicalibus, alterisque discoidalibus læte aurantiacis; pedibus piceis. Long. 2 millim.

Hab. MEXICO, Chilpancingo in Guerrero (*H. H. Smith*).

Head opaque, with two orange dots on the epistome. The thorax is opaque, wide, with the sides nearly straight, the base much rounded, and the front angles prominent; the post-ocular sinuation of the front margin is rather deep; there are two minute orange dots on the posterior part of the disc. The elytra are intricately wrinkled in a longitudinal direction, the rugæ quite close and very minute; on each elytron there is an orange mark, almost joined to the opposite one at the suture, and hooked internally, so as almost to form a ring (which it probably does in other examples); there are also several orange dots—two on the base, a little further apart than the thoracic ones, two on the disc behind the common mark, two united to the hook on its outer side or nearly so, and two at about one-quarter from the apex. The legs are rather long and pitchy.

One example only has been sent of this curious species, and I have therefore not been able to examine the details of the antennæ and palpi. The body beneath is black; the metasternum is rugose, like the elytra.

In several respects this insect is not unlike some of the *Neaporiæ*; but it is without pubescence, and the sculpture is so peculiar that the systematic position of the species is at present quite doubtful.

SCYMNUS (p. 226).

7 (A). **Scymnus veræ-pacis.**

Corpus ferrugineum, capite prothoraceque albidis, hoc vitta lata mediana nigra; elytris nigris nitidis, apice late dilute ferrugineo. Long. 1·75 millim.

Hab. GUATEMALA, Panima and Tamahu in Vera Paz (*Champion*).

The distinguishing characters of this *Scymnus*, in the section to which it apparently belongs, are its perfectly smooth, shining surface (no pubescence being visible on either of the four examples referred to it), the broad, sharply-defined black vitta of the thorax, the head and sides of the latter being white, and the red body and legs; the metasternum and base of the hind body are darker. It is not unlike *S. bugabensis*, but the punctuation is finer, and no sign of series is found here. From *S. apicalis* the same differences, as well as the total absence of pubescence, the more distinctly marked thorax, the red body, with the elytral epipleuræ also red, and numerous recondite but important characters differentiate *S. veræ-pacis*.

There are two examples from each locality: in one of those from Tamahu the thoracic vitta is more extended, occupying the whole disc of the thorax, and being twice as wide as the pale lateral portion; possibly this example is a female, but it has the head whitish-yellow.

COCCIDULA (to follow the genus *Scymnus*, p. 235).

Coccidula, Kugelann, in Illiger's Verz. der Käfer Preuss. p. 421 (1798).

Coccidula consists of two well-known European insects of oblong form, found in wet places, among reeds, &c.; a third species, from the United States, has been referred to it by Leconte and Crotch, on the authority of a single specimen; and a species from China is placed under this generic name in the Munich Catalogue, but it very probably is not congeneric.

The species here recorded is also doubtfully placed in the genus.

1. **Coccidula (?) ferruginea.**

Oblonga, ferruginea, breviter ac parce pubescens, crebre punctata; capite prothoraceque dilutioribus, minus irregulariter subtilius punctatis. Long. 4 millim.

Hab. MEXICO, Toxpam (*Sallé*).

Oblong, entirely ferruginous, the elytra darker than the head and thorax, and more strongly and irregularly punctured. The antennæ are short, the two basal joints stout and the second not much shorter, but smaller than the first; the four or five apical joints form a gradually thickened club. The thorax is wider than long and has the sides nearly straight; all the margins are finely bordered, and the sides converge towards the front; the basal lobe is not very pronounced. The scutellum is minute, scarcely visible. The punctures on the elytra are not at all serial (in the European species there are larger punctures forming substriate rows), but are confluent (often in transverse rows). The coxal fossæ are complete, and somewhat **V**-shaped; the external side of the marginal line is fainter than the internal side, and is reflexed at its outer termination.

Only two specimens have been seen by me from Mexico; but there is a similar, possibly identical, insect among the undetermined Coccinellidæ of the Crotch collection, from Tucuman and also from Chili (*Germain*).

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[Names in small capitals refer to Families, &c.; those in roman type to the chief reference to each species included in the work; those in italics to species incidentally mentioned, synonyms, &c.]

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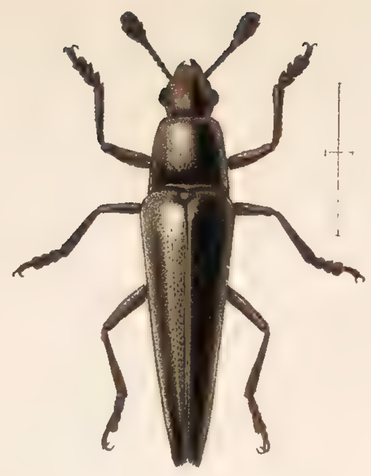
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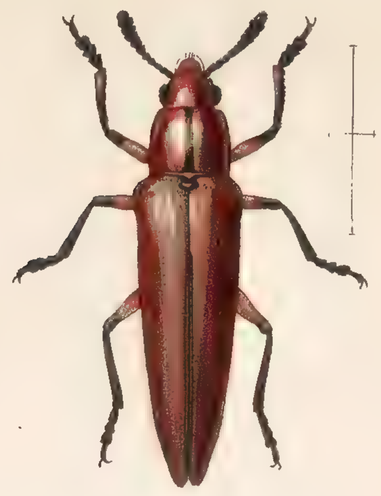
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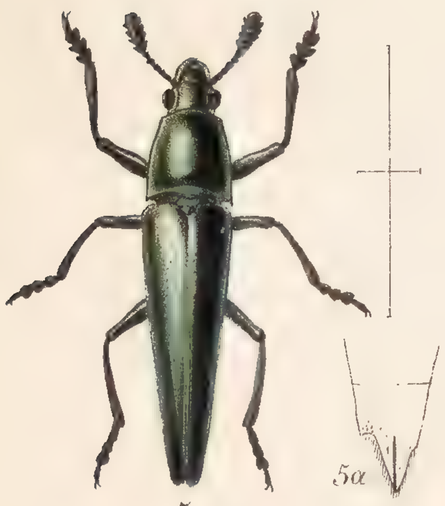
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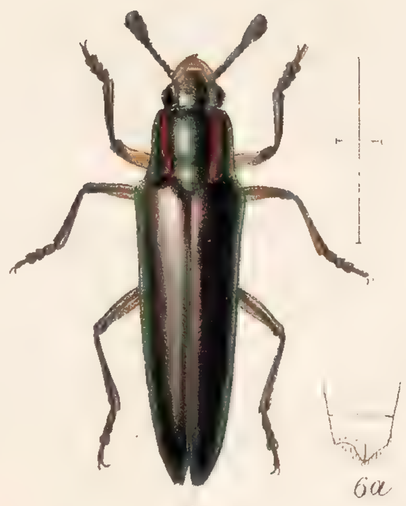
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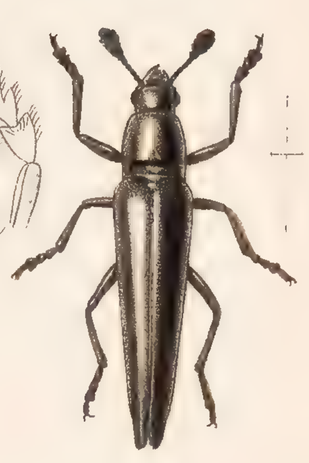
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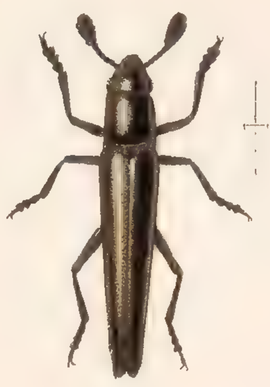
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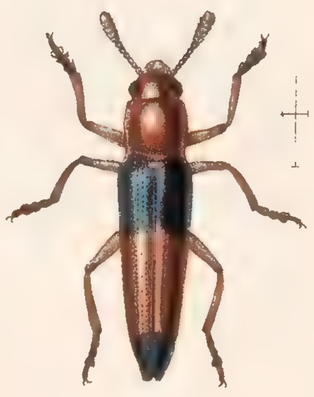
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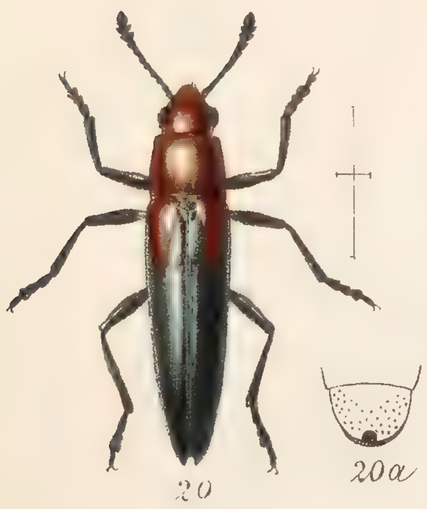
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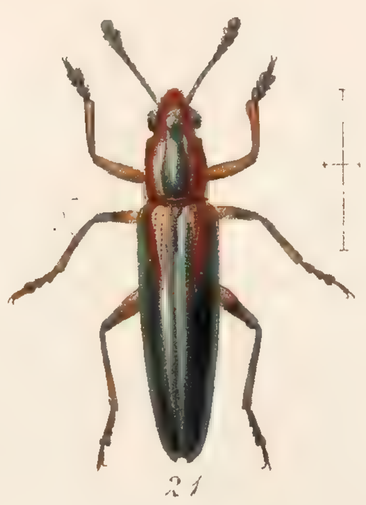
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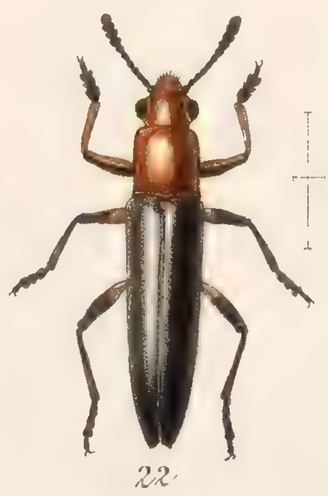
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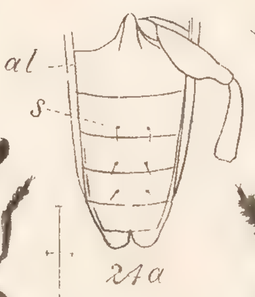
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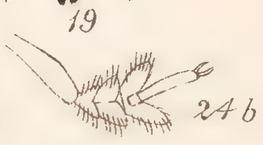
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1 ♂, 2 ♀ CAMPTOCARPUS LONGICOLLIS.
3 " TRAPEZIDERA ÆNEA.
4 " SEMIOTINA.
5, 5a, ♂ TERETILANGURIA PANAMÆ.
6 ♀, 6a, ♂ " VERSICOLOR.
7 ♂ .. DASYDACTYLUS BUPRESTOIDES.
8, 8a, ♂, 9, 9a, ♀ " ZUNILENSIS.
10 ♂ DASYDACTYLUS HONDOENSIS.
11 ♂ " VENTRALIS.
12 " CONCINNUS.
13 ♂ " SUBULATUS.
14 ♀ " SELLATUS.
15 LANGURIA CYANIPENNIS.
16 NOMOTUS PLUTONUS.
17 LANGURIA ACULEATA.
18 ACROPTEROXYS GRACILIS.
19 " " ,*var.*
20 ♀, 20a, ♂ LANGURITES LINEARIS, *var.* α
21 ♂ " " , *var.* β
22 ♂ " " , *var.* γ
23 ORTHOLANGURIA ELONGATA.
24, 24a, b, ♂, c, ♀ CROTCHIA PROXIMA.

W. Purkiss lith.

Hanhart imp.

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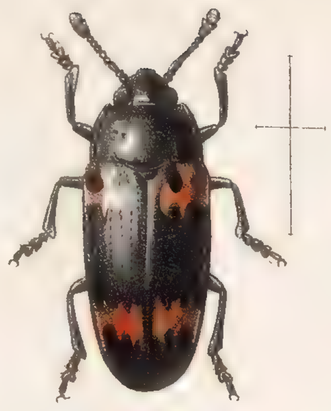
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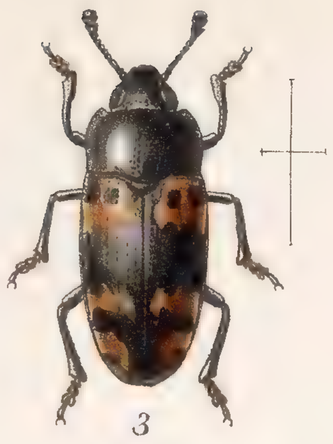
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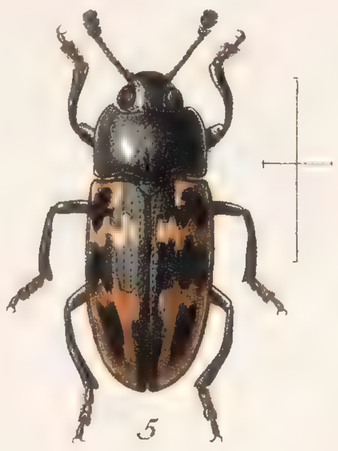
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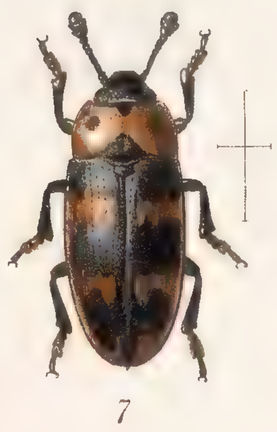
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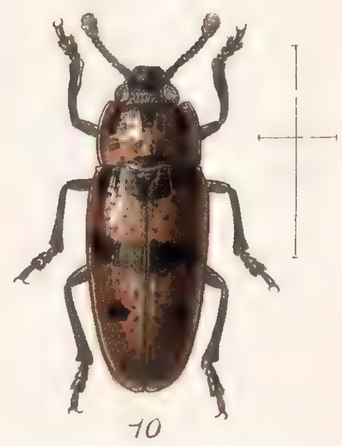
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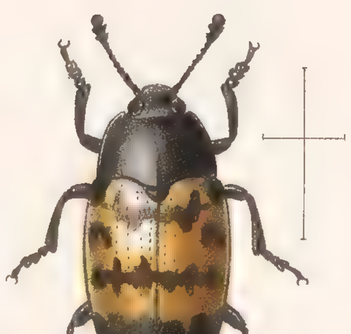
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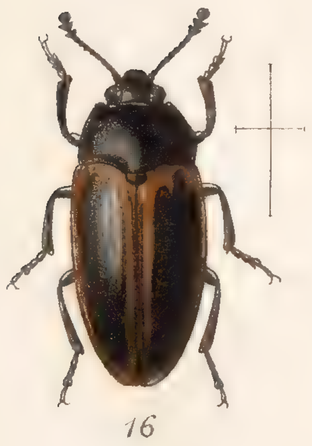
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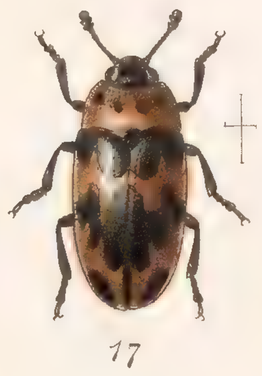
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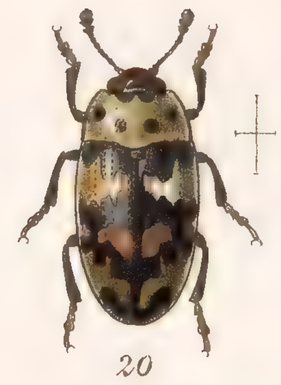
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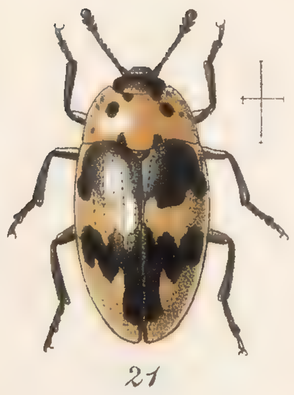
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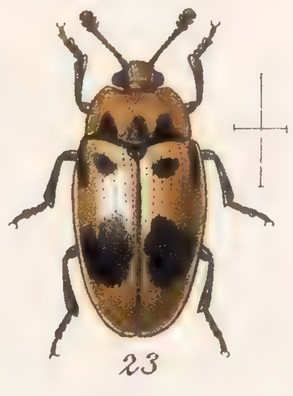
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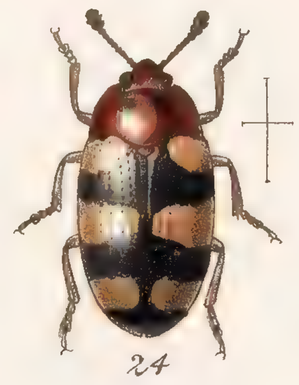
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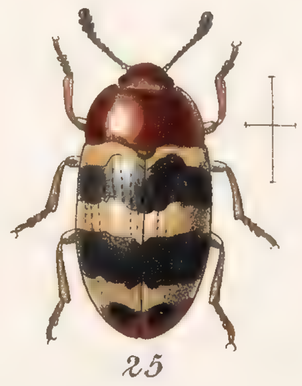
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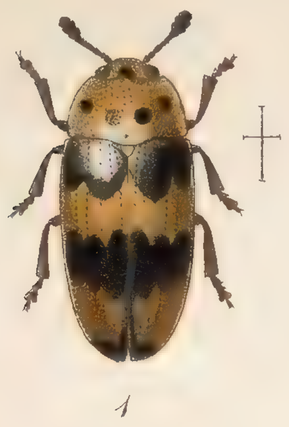
1 MEGALODACNE QUADRIGUTTATA.
2 " AUDOUINI.
3 PSELAPHACUS NICARAGUÆ.
4 " PŒCILOSOMUS.
5 " CURVIPES.
6 " " *var.* DISTORTUS.
7 " VITTICOLLIS.
8 " PUNCTICOLLIS.
9 PSELAPHACUS SEMICLATHRATUS.
10 " CONSPERSUS.
11 MEGISCHYRUS MEXICANUS.
12 " GUATEMALÆ.
13 " NICARAGUÆ.
14 " SANGUINOLENTUS.
15 " DISCIPENNIS.
16 " ZONALIS.
17 ISCHYRUS GRAPHICUS.
18 MYCOTRETUS PALLIDIOR.
19 ISCHYRUS SEPTEM-SIGNATUS.
20, " INSOLENS.
21, 22 " PROXIMUS.
23 " DISTINGUENDUS.
24 CALLISCHYRUS CANDEZEI.
25 " AMŒNUS.

W. Purkiss lith. Hanhart imp. 475.

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8



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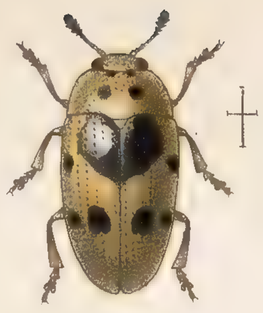

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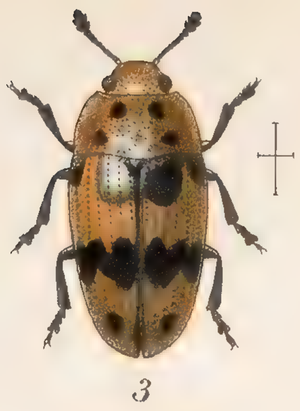

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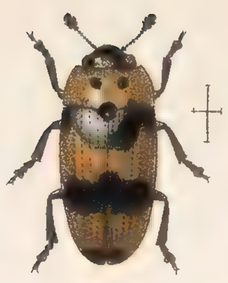

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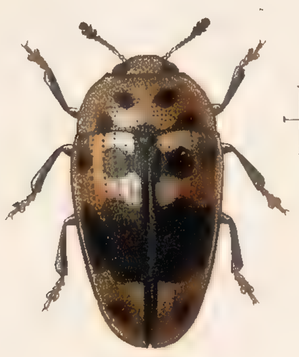

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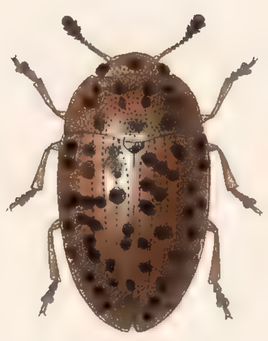

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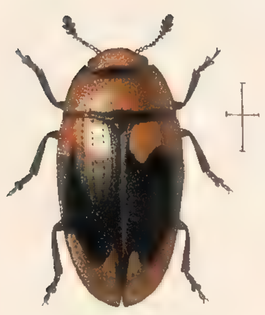

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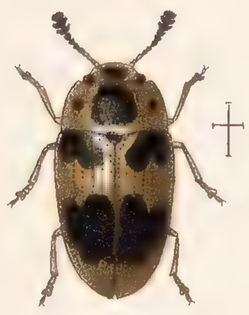

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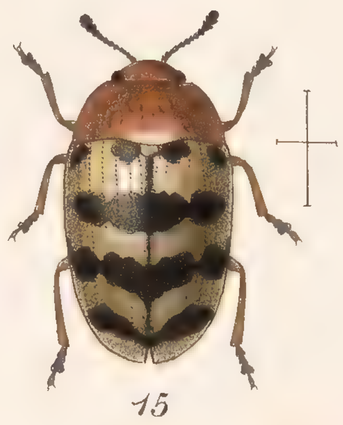

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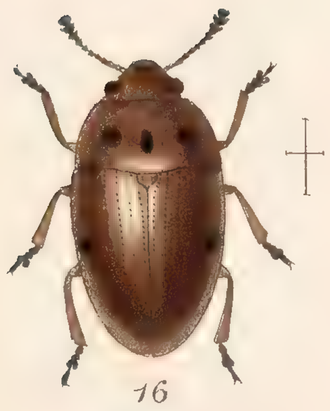

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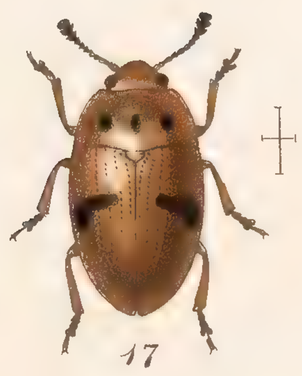

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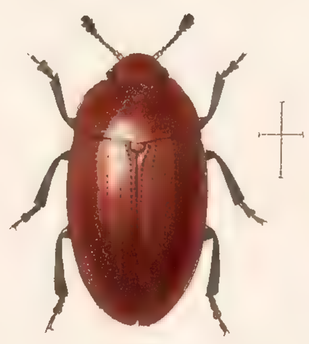

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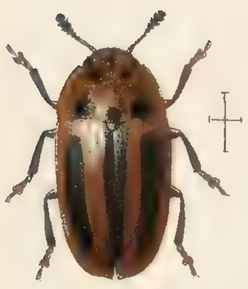

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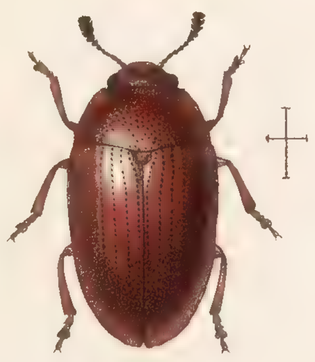

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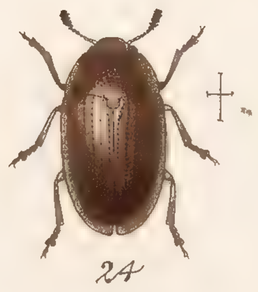

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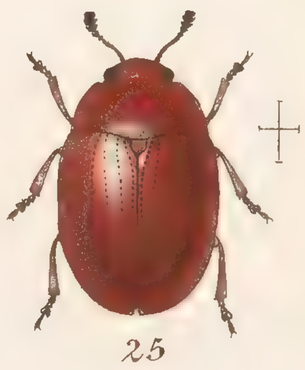


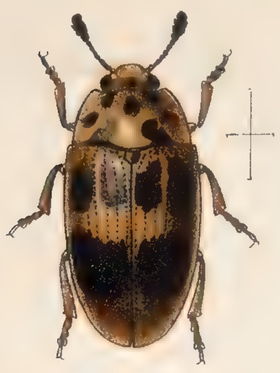
25

1 ISCHYRUS TETRASTICTUS.
2 » SCUTELLARIS.
3 » UNDULATUS.
4 » PICTUS.
5 » CHACOJÆ.
6 » QUINQUEPUNCTATUS.
7 » EPISCAPHULINUS.
8 MYCOTRETUS ORNATUS.

9 MYCOTRETUS TIGRINUS.
10 » GEMINUS.
11 » BISTRIGATUS, *var.*
12 » SEXPUNCTATUS.
13 » TERNOTATUS.
14 » PANAMANUS.
15 » ILLUSTRIS.
16 » SPADICEUS.
17 » » , *var. a*

18 MYCOTRETUS PECCARI.
19 » » , *var.*
20 » LESUEURI.
21 » VITTATUS.
22 » CRUENTUS.
23 » CONSANGUINEUS.
24 » COCCIDULINUS.
25 » FUSCITARSIS.

W. Purkiss lith. Hanhart imp.
486.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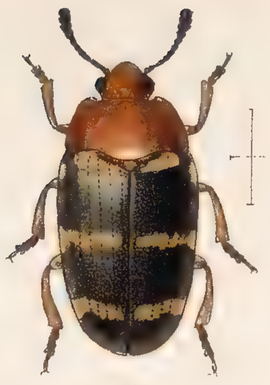
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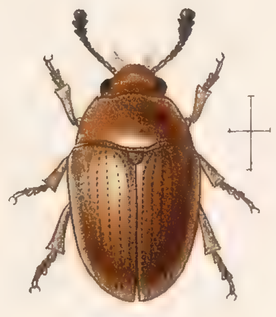
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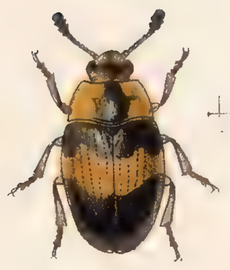
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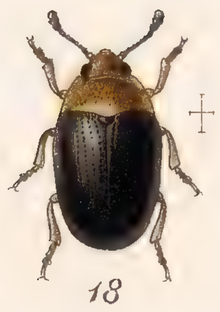
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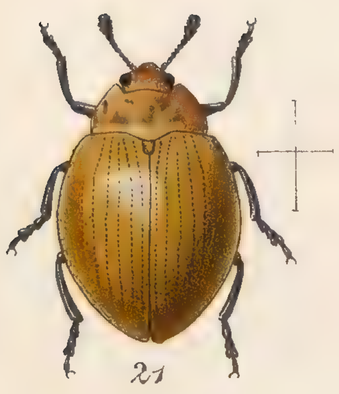
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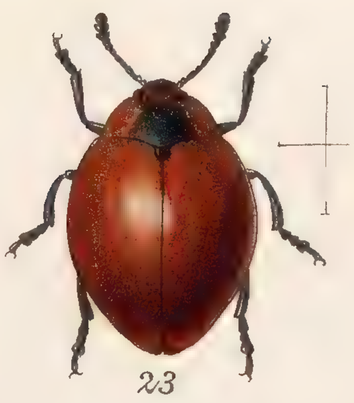
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25

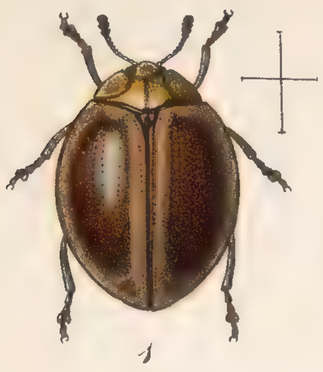
1 MYCOTRETUS MACULATUS.
2 „ SALLÆI.
3 „ ELEGANS.
4 „ ATRICAUDATUS.
5 „ LACCOPHILINUS.
6 „ OPPOSITIPUNCTUM.
7 „ EPOPTERUS.
8 MYCOMYSTES FERRUGINEUS.
9 PARATRITOMA DIVISA.
10,11 „ „ ,*var.*
12 „ CADUCA.
13 MYCOPHTHORUS PAUPERCULUS.
14 PSEUDOLYBAS GLABER.
15 LYBAS GRANATUS.
16 „ CARBUNCULUS.
17 LYBANODES CASTANEUS.
18 TRIPLAX CHAMPIONI.
19 „ REDIVIVUS.
20 TRITOMA DORSALIS.
21 COCCIMORPHUS EMYS.
22 ÆGITHUS MELASPIS.
23 „ CARDINALIS.
24 „ RUFIPENNIS.
25 „ MERIDIONALIS.

W. Purkiss lith.

Hanhart imp.

490.

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Inches 1 2 3 4 5 6 7 8
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19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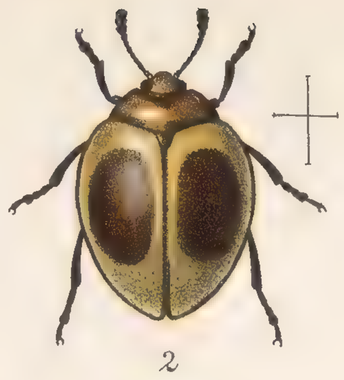
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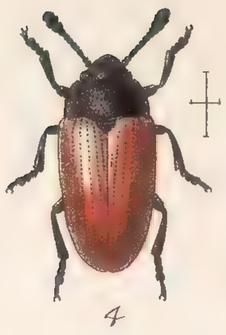
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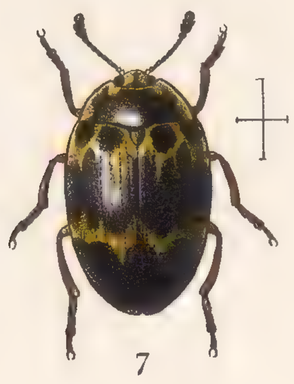
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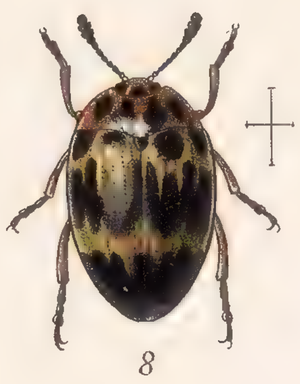
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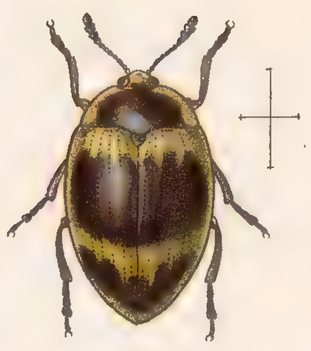
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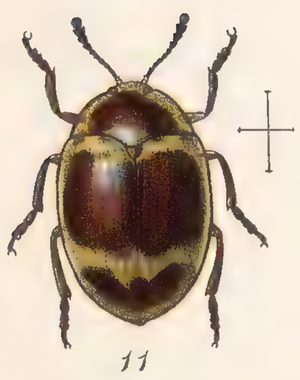
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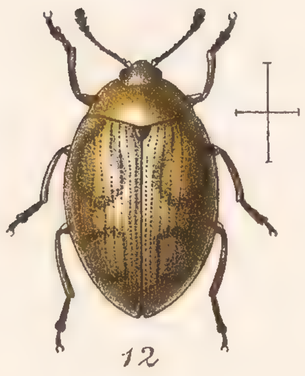
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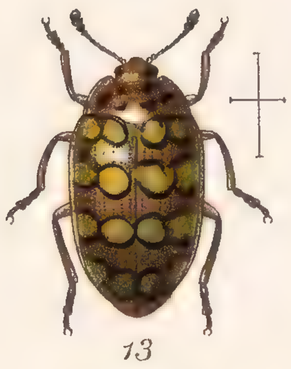
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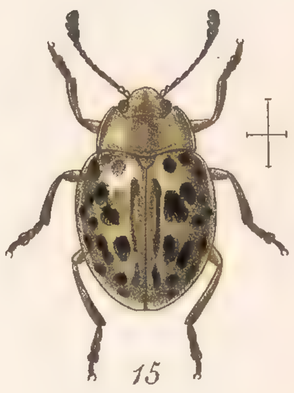
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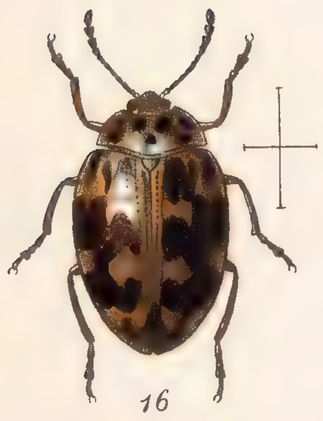
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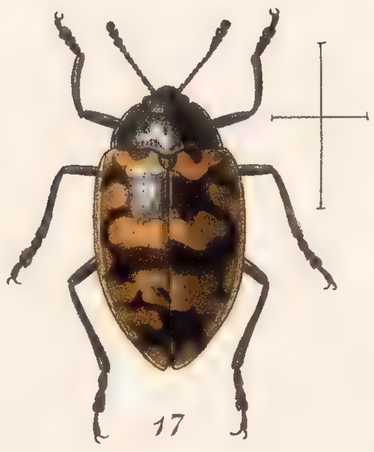
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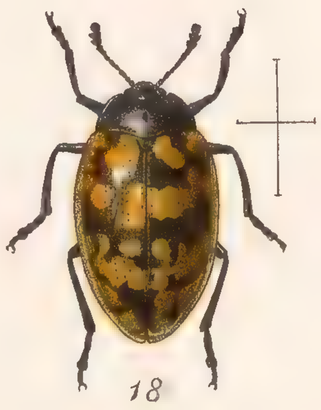
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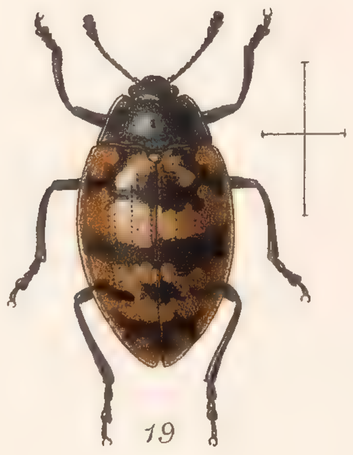
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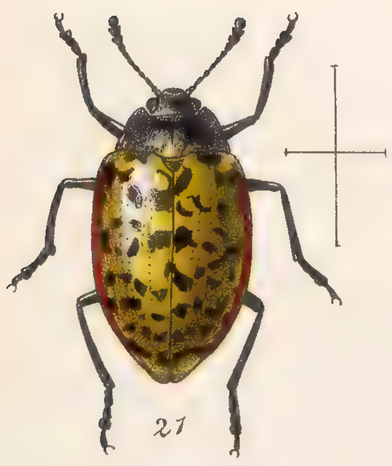
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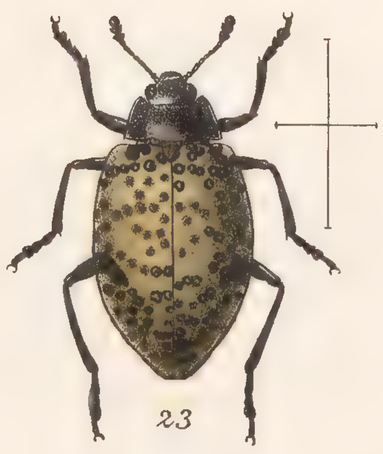
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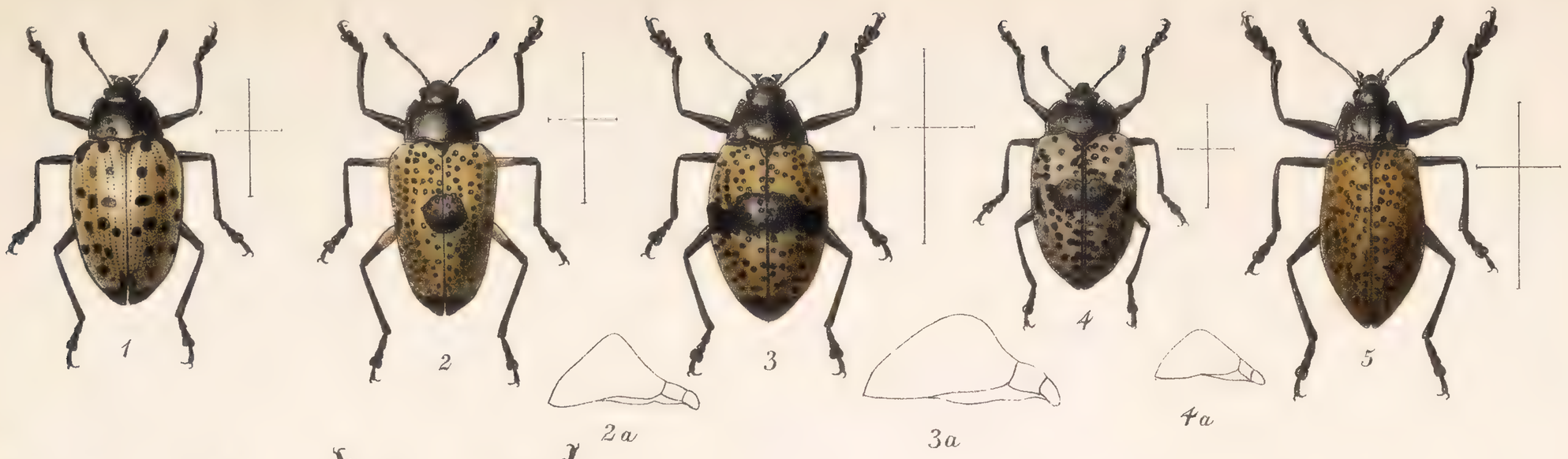
24

1 ÆGITHUS JANSONI.
2 " DISCOIDEUS.
3 " GRAMMICUS.
4 HÆMATOCHITON ELATEROIDES.
5 SCÆOTHER CARBONARIUS.
6 SCAPHENGIS PICIPES.
7 BRACHYSPHENUS DELINEATUS.
8 BRACHYSPHENUS DELINEATUS, *var.*
9 " PULCHER.
10 " CATILLIFER.
11 " " , *var.*
12 " CONSPICILLATUS.
13 " SEDECIM-MACULATUS.
14 " FESTIVUS.
15 " MULTIGUTTATUS.
16 BRACHYSPHENUS FRAGMENTATUS.
17,18,19 EROTYLUS LEOPARDUS.
20 " " , *var.* CONFLUENS.
21 " NICARAGUÆ.
22 CYPHEROTYLUS FENESTRATUS.
23 " BOISDUVALI.
24 " VICINUS.

W. Purkiss lith. Hanhart imp.
503.

KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters Inches



1♂ EROTYLUS NIGRONOTATUS.
2,2a♂ CYPHEROTYLUS DROMEDARIUS.
3,3a♂ " GIBBOSUS ?
4,4a " ELEVATUS, *var.*
5♂ " IMPRESSOPUNCTATUS.
6♂ " GUATEMALÆ.
7♂ " COSTARICENSIS.
8♂ " GAUMERI.
9♀ CYPHEROTYLUS ASPERSUS
10♂ " ALUTACEUS.
11 SCAPHIDOMORPHUS BOSCI.
12 PREPOPHARUS XANTHOMELAS.
13 MICREROTYLUS LUNULATUS.
14 ZONARIUS CACICUS.
15,16 " JANSONI.
17 PREPOPHARUS DUPONCHELI, *var.*
18 PREPOPHARUS DUPONCHELI.
19 " SPILOTUS.
20 PRIOTELUS APIATUS.
21 HOMŒOTELUS CONFUSUS.
22 " GEMELLATUS.
23 " MEXICANUS.
24 " " , *var.?*
25 " JANSONI.

W Purkiss lith.

Hanhart imp
505

1 CORYNOMALUS AURONITENS.
2 „ CINCTUS.
3 „ „ ,*var*.
4 „ SATURATUS.
5 „ DENTATUS..
6 „ „ ,*var*.
7 PHALANTHA CHAMPIONI.
8 „ INTRICATA.
9 ACINACES LEBASI.
10♂ EPIPOCUS FIGURATUS.
11♂ „ CINCTUS.
12♂ „ BIVITTATUS.
13♂ „ SUBCOSTATUS.
14♂ „ BINOTATUS.
15 „ SALLÆI.
16♂ ANIDRYTUS LIQUEFACTUS.
17♂ „ CONTRACTUS.
18 ANIDRYTUS DOLOSUS.
19 EPOPTERUS OCELLATUS,*var* MACULOSUS.
20 „ COMPTUS.
21 „ SCALARIS.
22 „ PANTHERINUS.
23 STENOTARSUS ANGUSTULUS.
24 SYSTÆCHEA CYANOPTERA.
25 STENOTARSUS CIRCUMDATUS.

W. Purkiss lith. Hanhart imp. 534

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Inches 1 2 3 4 5 6 7 8

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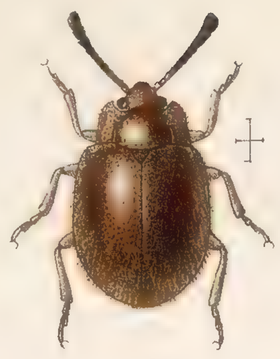
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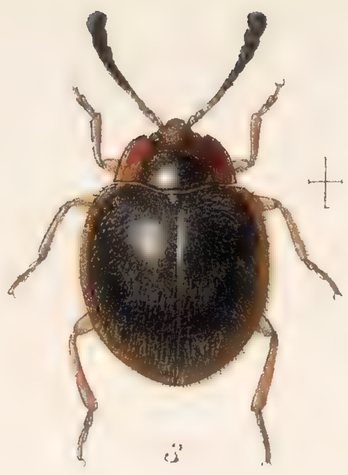
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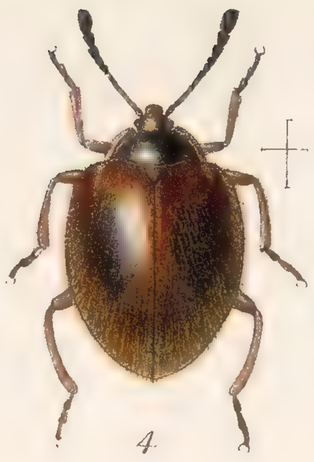
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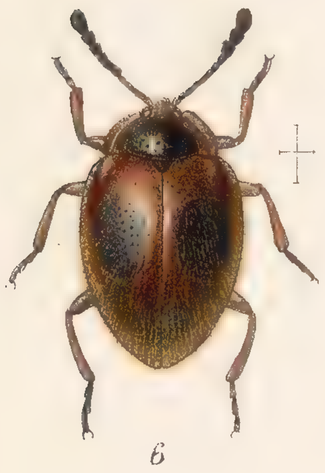
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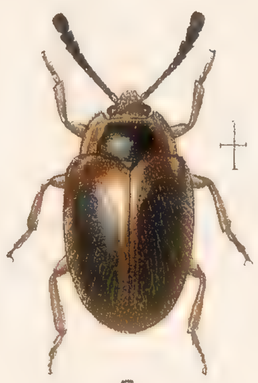
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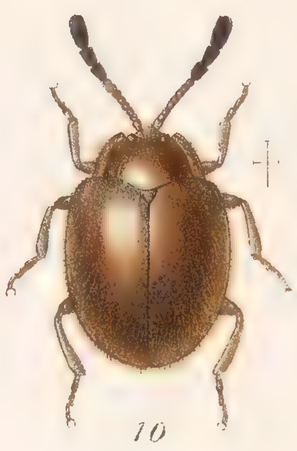
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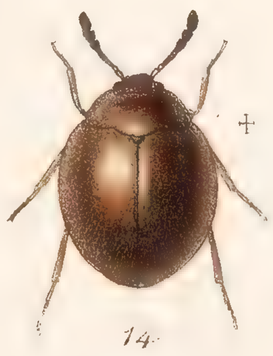
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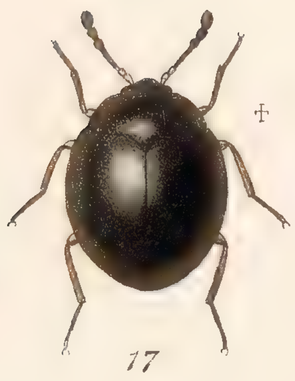
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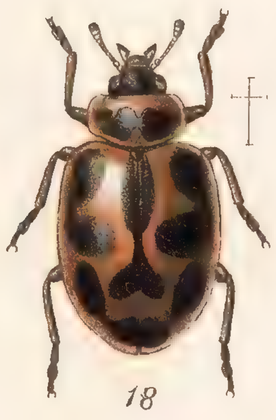
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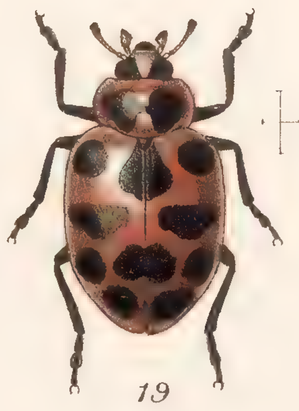
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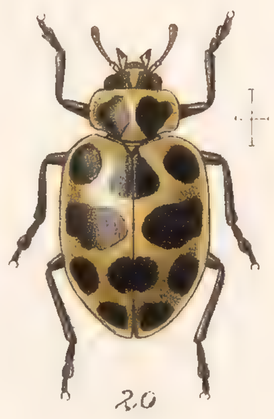
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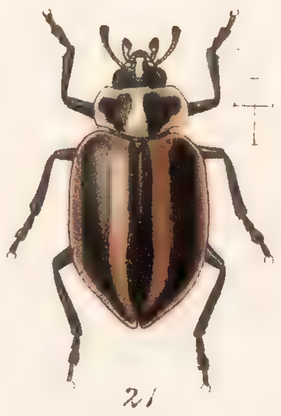
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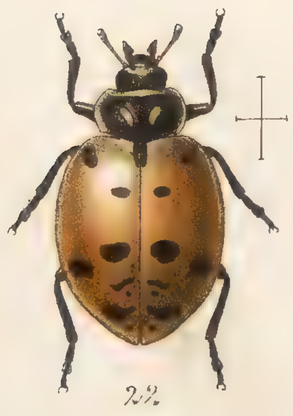
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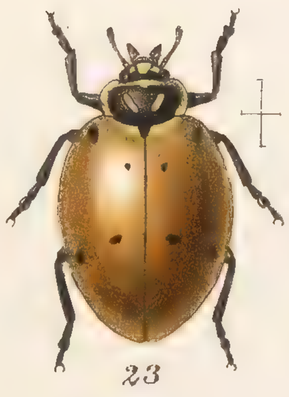
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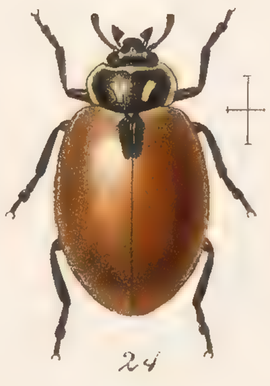
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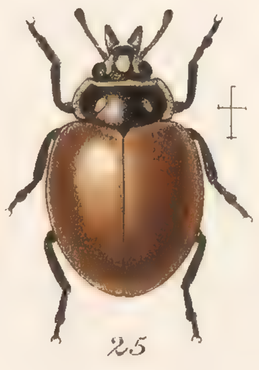
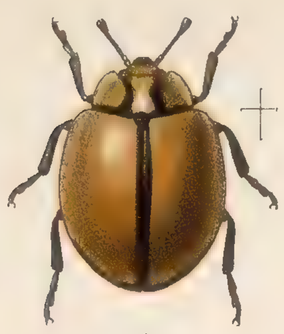

25

26

1 EPHEBUS PICEUS.
2 „ CHONTALESIANUS.
3 SYSTÆCHEA CHAMPIONI.
4 STENOTARSUS CORDATUS.
5 „ DISCIPENNIS.
6 „ GLOBOSUS.
7 „ OBLONGULUS.
8 „ PANAMANUS.
9 STENOTARSUS SMITHI.
10 „ CLAVIGER.
11 „ MACULICOLLIS.
12 RHYMBUS LIMBATUS.
13 „ PICEUS.
14 EXYSMA ORBICULARIS.
15 „ (?) TENUICORNIS.
16 DIALEXIA SETULOSA.
17 MICROPSEPHUS MNIOPHILINUS.
18 NÆMIA SERIATA.
19,20 MEGILLA MACULATA.
21 NÆMIA VITTIGERA.
22 HIPPODAMIA CONVERGENS.
23 „ „ , *var.*
24 „ „ , *var.*
25 COCCINELLA EMARGINATA.
26 „ TRANSVERSOGUTTATA.

W. Purkiss lith.
Hanhart imp.
565.

KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches



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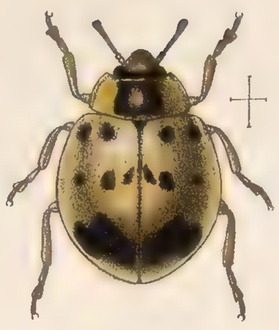

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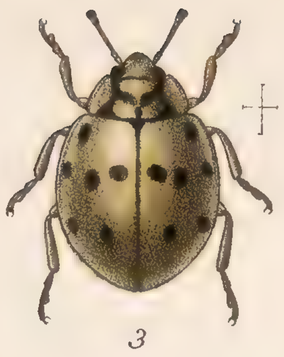

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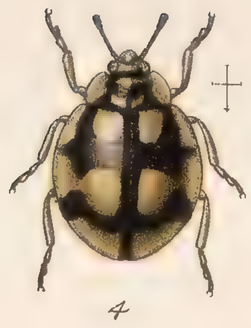

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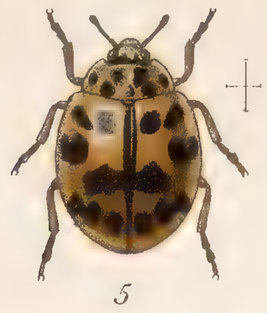

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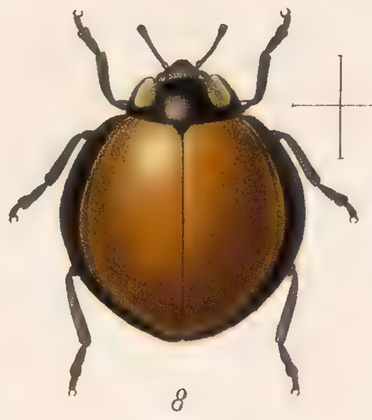

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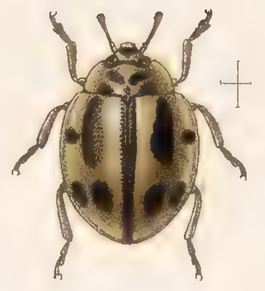

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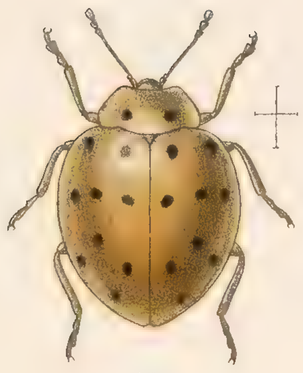

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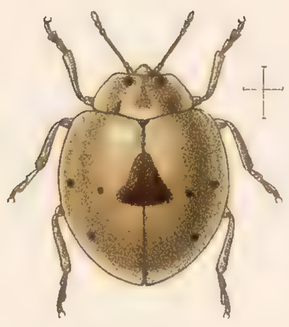

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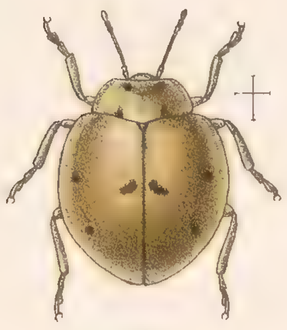

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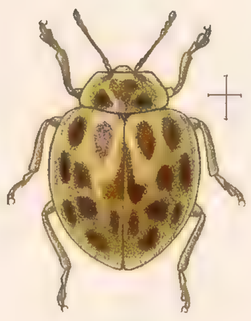

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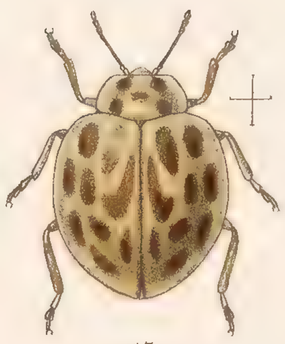

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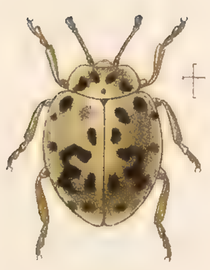

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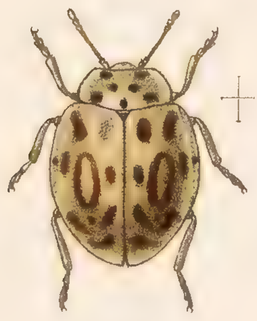

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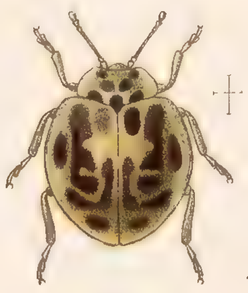

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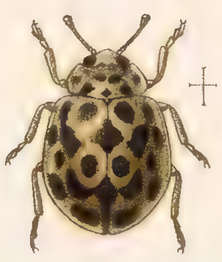

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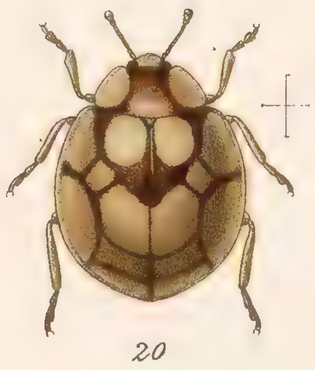

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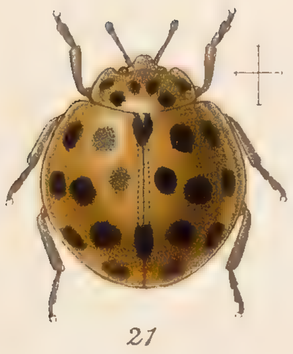

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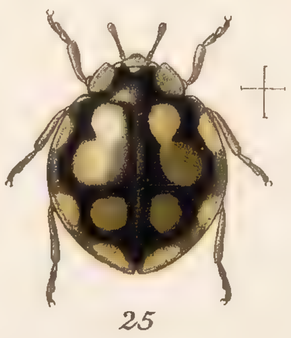


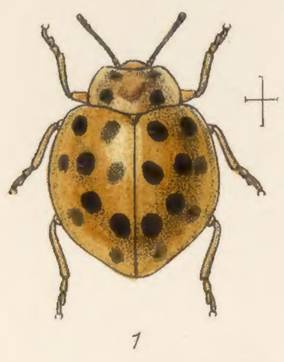
25

1 COCCINELLA LUTEIPENNIS.
2 " AMPLA.
3 " CYATHIGERA.
4 " ALBOPICTA.
5 " MACULOSA.
6 " COMPTA.
7 " CONCINNA.
8 PELINA HYDROPICA.
9 COCCINELLA PANTHERINA.
10 " QUICHENSIS.
11 NEOHALYZIA PERROUDI.
12,13 HALYZIA EMACIATA.
14,15 " EPISTICTICA.
16 PSYLLOBORA LUCTUOSA.
17 PSYLLOBORA ROEI.
18 " CONFLUENS.
19 CLEIS LYNX.
20 NEOCALVIA AREOLATA.
21 CYCLONEDA SALLÆI.
22-24 " ABDOMINALIS.
25 " GILARDINI.

W. Purkiss lith.

Hanhart imp.
587.

KODAK Color Control Patches
© The Tiffen Company, 2000
Kodak
LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Centimeters
Inches



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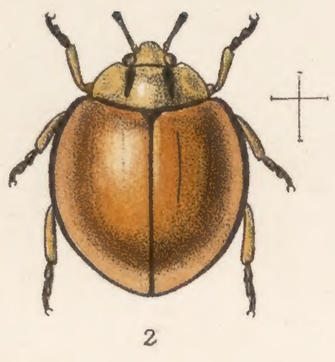

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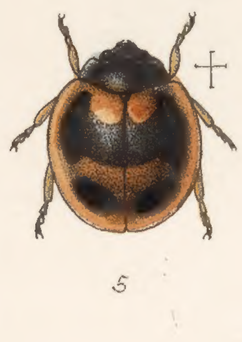

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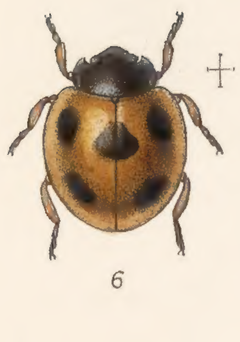

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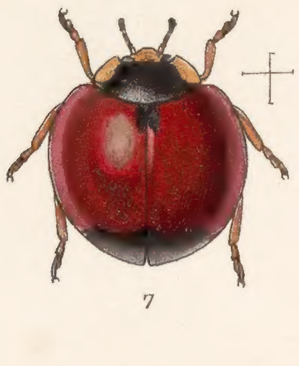

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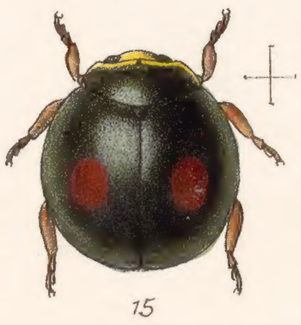

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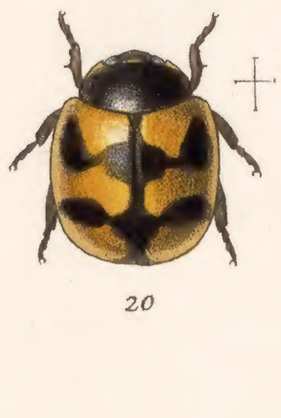

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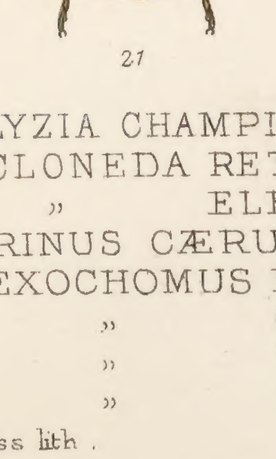

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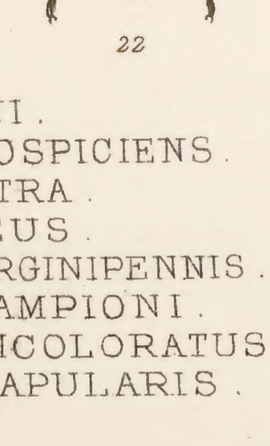

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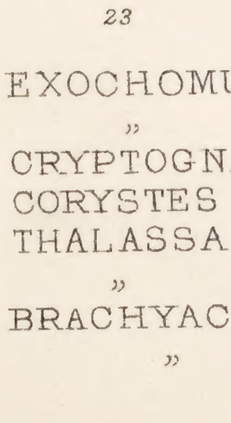

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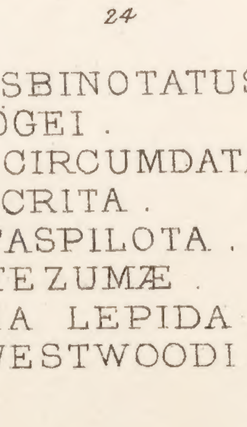

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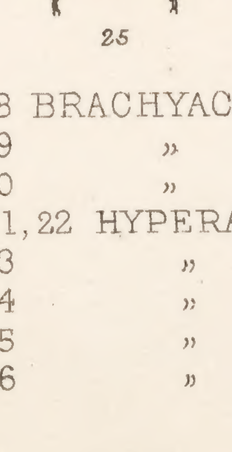

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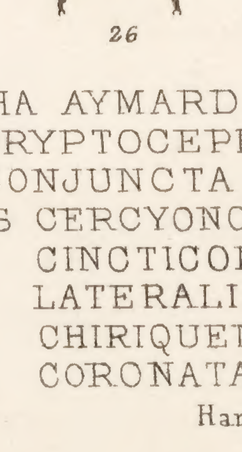

26

1 HALYZIA CHAMPIONI.
2 CYCLONEDA RETROSPICIENS.
3 " ELECTRA.
4 CURINUS CÆRULEUS.
5,6 EXOCHOMUS MARGINIPENNIS.
7 " CHAMPIONI.
8 " TRICOLORATUS.
9 " SCAPULARIS.
10 EXOCHOMUS BISBINOTATUS.
11 " HÖGEI.
12 CRYPTOGNATHA CIRCUMDATA.
13 CORYSTES HYPOCRITA.
14 THALASSA PENTASPILOTA.
15 " MONTEZUMÆ.
16 BRACHYACANTHA LEPIDA.
17 " WESTWOODI.
18 BRACHYACANTHA AYMARDI.
19 " CRYPTOCEPHALINA.
20 " CONJUNCTA.
21,22 HYPERASPIS CERCYONOIDES.
23 " CINCTICOLLIS.
24 " LATERALIS.
25 " CHIRIQUENSIS.
26 " CORONATA.

W. Purkiss lith.

Hanhart imp.
625.

1 PENTILIA (?) CONVEXA.
2 HYPERASPIS JOCOSA?
3 ♀ " BICRUCIATA?
4 " SEXVERRUCATA.
5 ♂ " KUNZII.
6 " CENTRALIS.
7 ♀ " PANZOSÆ.
8 ♂ " DIVERSA.
9 " CALDERANA.
10 HYPERASPIS GUATEMALENSIS.
11 " PANAMENSIS.
12 " NOTICOLLIS?
13 " ADELAIDA.
14 SELADIA BELTIANA.
15 " ALBOGUTTATA.
16 " " *var.*
17 HYPERASPIS TERMINATA.
18 PORIA SALLÆI.
19 PORIA CHIRIQUENSIS.
20 " CUPREA.
21 " DETRITA.
22 EUPALEA PICTA.
23,23a ORYSSOMUS SUBTERMINATUS.
24 AZYA LUTEIPES.
25 LADORIA DELPHINÆ
26 EXOPLECTRA SUBÆNESCENS.
27 " CRUENTIPES.

W. Purkiss lith. Hanhart imp. 643

KODAK Color Control Patches © The Tiffen Company, 2000 Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black
Inches 1 2 3 4 5 6 7 8
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

1 DIORIA SORDIDA.
2 NEAPORIA PLAGIODERINA.
3 » INDAGATOR.
4 » CRIBRATA.
5 » METALLICA.
6, 6a » ARGENTIFRONS.
7 » AMABILIS.
8 » UNIPUNCTATA.
9 » PUBESCENS.

10 NEAPORIA RUGOSA.
11 » COMPTA.
12 » CHIRIQUENSIS.
13 » CŒLESTIS.
14 » CUPREA.
15 ORTALISTES OBESUS.
16 » GERMANUS.
17 » IMMERSUS.

18 SCYMNUS THORACICUS.
19 » PANAMENSIS.
20 » LOEWI.
21 » APICALIS.
22 » BISBINOTATUS.
23 » PICTUS.
24 VEDALIA SIEBOLDI.
25 SCYMNUS COLORATUS.
26 » ASPERSUS.

W. Purkiss lith.
Hanhart imp.
685.

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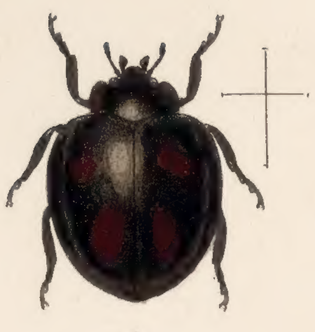

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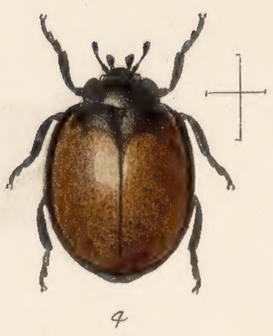

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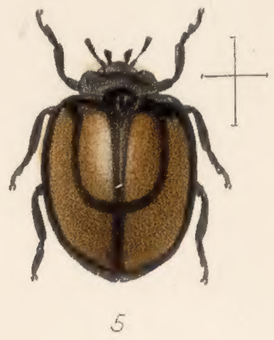

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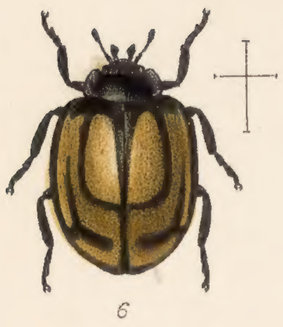

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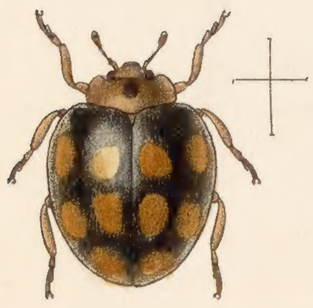

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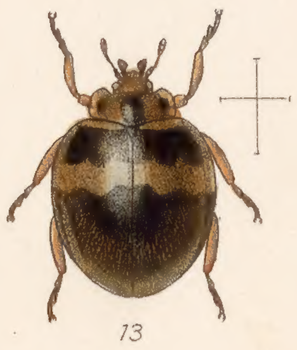

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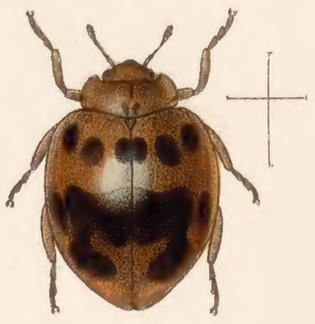

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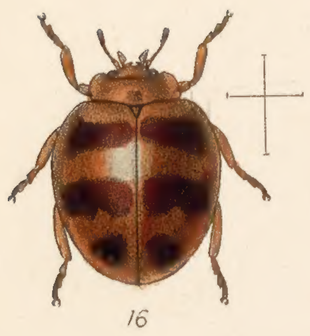

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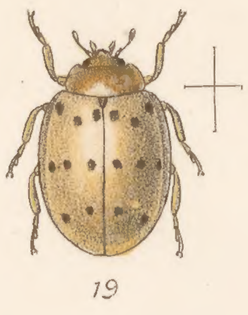

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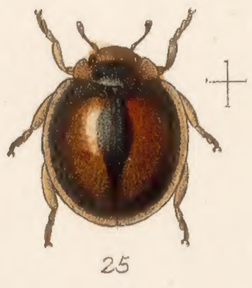

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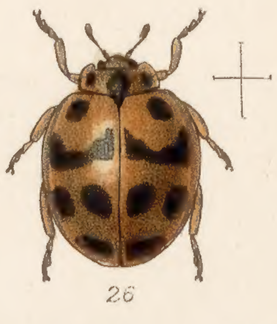

26

1 EPILACHNA ABRUPTA.
2 » TUMIDA.
3 » PLAGIATA.
4 » NIGROCINCTA.
5 » » ,*var*.
6 » » ,*var*.
7 » VINCTA.
8 » CALLIGRAPTA.
9 » DEFECTA.

W. Purkiss lith.

10 EPILACHNA DEFECTA, *var*.
11 » » ,*v*. FUSCIPES.
12 » BOREALIS.
13 » » ,*v*. ÆQUINOCTIALIS.
14 » » ,*var*.
15 » » ,*v*. IMMACULICOLLIS.
16 » » ,*v*. DISCINCTA.
17 » VARIVESTIS.

18 EPILACHNA VARIVESTIS, *v*. VARIPES.
19 » » ,*var*.
20 » » , » , *larva*.
21 » VULNERATA.
22 » VANPATTENI.
23 » MODESTA.
24 » POLLUTA.
25 » MITIS.
26 » PATULA.

Hanhart imp.
686.

Inches 1 2 3 4 5 6 7 8
Centimeters 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
KODAK Color Control Patches © The Tiffen Company, 2000
Kodak LICENSED PRODUCT
Blue Cyan Green Yellow Red Magenta White 3/Color Black